METHODS AND STATUS OF SCIENTIFIC RESEARCH

WALTER EARL SPAHR
AND
RINEHART JOHN SWENSON

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METHODS AND STATUS OF SCIENTIFIC RESEARCH

With Particular Application to the Social Sciences

by

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METHODS AND STATUS
OF SCIENTIFIC RESEARCH

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PREFACE

THIS book is designed for the beginner in research, particularly for college seniors and for those who are expecting to engage in research leading to the Master and Doctorate degrees in the social science fields. The work has been planned to provide the novitiate in research with the three most valuable tools necessary to successful research: (1) the principles of critical scholarship which appear to be most generally acceptable among the leading scholars of the world; (2) the proper technique to be used in applying the principles of scientific method; and (3) a general knowledge of the status of research today in those fields in which the social scientist does the major part of his research. Above all it is the purpose of this book to give the beginner in research that proper attitude of mind without which he cannot hope to produce scholarly results.

The authors believe that the mental development of young people, college students in particular, may be divided roughly into the following stages: The first is one which is fairly characteristic of the freshman whose chief concern in coming to college may be to secure his degree. Believing that the simplest way to do this is to master his texts and the lectures of his instructors, he becomes the more or less faithful follower of his narrow routine, and submits neither the texts nor the lectures to the cross-fire of extensive collateral reading which might raise disturbing doubts and so jeopardize the possibility of securing the grades necessary for the coveted degree. Furthermore, most college freshmen are very young and, therefore, have not acquired the intellectual maturity necessary for constructive study. This attitude and mental status of young students, real or assumed, are reflected in the arrangement of curricula and in the pedagogical procedure in vogue in high schools and in the first years in college. Schools are filling stations on the highway of life where young people stop to fill their absorptive minds with as many facts as they can be made to hold under pressure. The whole procedure is rather arbitrarily conforming, and tends to accentuate the student's natural deficiencies; the student is not encouraged to reason why, to question and to doubt; he is taught to trust, to accept, and to believe—to follow, not to lead—to be intellectually passive.

Another stage in the student's mental development begins when he enters the realm of doubt. Some arrive at this stage earlier than others. In general, college sophomores, juniors, and seniors begin to manifest doubts in varying degrees as to the infallibility of books and instructors. They become conscious of their own mental powers and begin to enjoy their use. This is the beginning of their intellectual growth. They are passing from the purely acquisitive to the inquisitive stage, from a passive to an active mental life. This is a critical period in a student's life, because he has not had much mental discipline to fortify his doubt against an unbalanced skepticism. The mental pendulum may swing too far. Instead of a constructive critic, with an honest desire for truth, he may become a destructive and irrational fault-finder, who takes pride in doubting everything indiscriminately, and who thus acquires a negative philosophy of life—he is always looking for error and not for truth. Such a person is a trial to his teachers and to his friends.

Emerging from the transitional period of doubt, which is negative, the student enters the stage of constructive scholarship. This is the creative stage—that marking the beginning of intellectual maturity. Now the student brings to his task a questioning but disciplined mind, with confidence in his own power to discover truth. He has acquired mental poise and objectivity; he is ready to do constructive work, to enter into the field of scholarship.

It is for those persons who are approaching or have reached this constructive stage of mental development that this book on methodology is designed. It should afford them the guiding principles and technique, and aid them in developing the proper mental attitude toward their research problems and the evidence involved. The authors believe that of all the things which may be learned in proceeding through the various steps in formal education—particularly during the later stages—nothing is more valuable than the mastering of sound principles of methodology. Most facts probably are forgotten, but good methodology becomes a fundamental part of one's mental attitude and method of doing things.

The authorship of this book is distributed as follows: Mr. Spahr wrote the chapters dealing largely with the principles of critical scholarship and with the status of research while Mr. Swenson wrote those dealing with technique. Specifically, the former is the author of Chapters I-VI, X, XI, and XIV-XVIII; the latter is the author of Chapters VII-IX, XII, and XIII.

With respect to his portion of the work Mr. Spahr wishes to express publicly his debt to Dr. Willford I. King, Professor of Economics, New York University, for his criticism of Chapters X and XI; to Dr. Clyde Eagleton, Associate Professor of Government, New York University, for his criticism of Chapter XV; to Dr. Earl E. Muntz, Associate Professor of Economics, New York University, for his suggestions with respect to the sociological aspects of the work; to Dr. Loyle A. Morrison, Assistant Professor of Economics, New York University, for his criticism of Chapters I and XI; and to Mr. Richard A. Girard, Assistant Instructor in Economics, New York University, who during the later stages of the work rendered most valuable service in checking references, in gathering materials, and in doing with characteristic care a great variety of other detailed work which usually falls on the author as a genuine burden.

Mr. Swenson, in a similar manner, wishes to acknowledge his indebtedness to Dr. Homer A. Watt, Professor of English, New York University, for reading and criticising Chapter XIII; and to Mr. Harry J. Freeman, of the faculty of the School of Law, New York University, for constructive suggestions relative to Chapter IX.

W. E. S.
R. J. S.

New York, 1929.

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METHODS AND STATUS
OF SCIENTIFIC RESEARCH

CHAPTER I

IMPLICATIONS OF SCIENTIFIC METHOD IN RESEARCH

The embryonic scholar must understand scientific methodology

Those who are considering the undertaking of research should grasp at once certain elementary but fundamental considerations before proceeding farther with their endeavors. These broad and general questions are surveyed in this chapter not only to arrest the attention of the reader at the outset but in order to give him something of a perspective before he is introduced to the more technical and detailed principles involved in sound methods of research.

The beginner in research should understand that there are certain general principles which are employed by critical scholars in pursuing their research. These principles are tried and tested, recognized and approved by scholars, and a violation of them marks the investigator at once as an uninitiated and, of necessity, an unreliable research worker. The investigator, moreover, should secure at the first opportunity an appreciation of the qualities and aptitudes demanded of the scholar and should understand clearly the rewards and punishments which await him. These are the problems to which this chapter is devoted. The considerations are broad and general but they are neither platitudinous nor insignificant; they are fundamental truths which are amplified in succeeding chapters, which gather additional meaning when examined in detail, and are fully appreciated only with maturity and after years of painful experiences.

Nature of a scholarly investigation

Any scholarly investigation is a search for truth, for facts, for certainties. By truth we mean exact accordance with that which is, or has been, in short, a verified fact. By a fact we mean an act, an event, a circumstance, or anything which comes to pass. A certainty is a fact or truth unquestionably established; and a truth may be said to be established when there is a coincidence of the observed sequences of events with the laws of experience as recognized by competent scientists. A detailed analysis of these concepts easily leads to an involved metaphysical discussion; it is believed that this may be avoided profitably without sacrificing a fairly accurate impression of what is meant by truth. While some scholars think it impossible for any research worker, particularly in the social sciences, to arrive at truth, it is undoubtedly and incontestably the ultimate aim and ideal of the scientific research worker.[1]

To say that a scholarly investigation is a search for truth will impress the reader as quite obvious if not trite, nevertheless very few people indeed grasp its real significance. Were this not true there would be no justification for this book.

We have absolute knowledge of but few things. What most persons think is knowledge or possession of truths or certainties is merely belief—the uncritical acceptance of opinions and assertions of others as true without immediate personal knowledge.

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[1] Professor Allen Johnson, *The Historian and Historical Evidence* (Scribners, New York, 1926), p. 141, has this to say among other things on this point: "To say that a historian should tell the truth is a counsel of perfection. It assumes that there is absolute truth to which he may attain. Such a quest, however, is as hopeless as the metaphysicians' search after 'things-in-themselves'—that hypothetical outside world of things which are supposed to stimulate our sense-organs to activity. . . . The most that historians can know is that historical past which has been perceived and reported by human intelligence. The history of the world is the history of the world as constructed in human consciousness under distinct limitations. Whether the historian's aim is to tell 'how it really was' or 'how it really came to be,' he can never reach mathematical certainty, and he is fortunate indeed if he can reach a high degree of probability, a probability beyond reasonable doubt. There is an inevitable relativity in historiography." Johnson mystifies the reader, however, when he speaks of "arriving at the truth of events" (p. 170), and when he says (p. 176) the historian's obligation is "to tell the truth, the whole truth, and nothing but the truth."

Henry Morse Stephens once said, "The absolute truth with regard to the past can never be discovered or narrated by human men, owing to the natural prejudices of environment, apart from the impossibility of obtaining complete information; but at least an honest attempt should be made to approximate to the truth, and this is what the modern conception of history demands. Even when dealing with long past ages man's infirmity of natural prejudice inevitably intervenes." *Counsel Upon the Reading of Books, With an Introduction by Henry Van Dyke* (Houghton Mifflin Co., New York, 1920), pp. 55-56.

The problem of the scholar is to question mere opinions and assertions of others, to distinguish between probabilities and beliefs on the one hand, and absolute, verified facts on the other.

To distinguish between probabilities, weak or strong, and truth is not always simple. It compels us at once to set some workable standard for truth. The standard set is not one on which all will agree because of the many philosophical, metaphysical, and logical questions involved. Nevertheless, there must be some fairly accurate criterion which is workable and acceptable to the great majority of scholars. An immediately practical problem in research is raised when one attempts to determine the point at which a presumption or probability ceases to be a presumption or probability and becomes an established truth. The differences between probability and truth constitute the most fundamental differences between scholarly and unscholarly research when the research worker fails to distinguish them.

Some facts are so large and so well established that they may be said to be true without raising any controversy. For example: Woodrow Wilson was President of the United States. Regarding many other questions there will be disagreement as to whether the facts have been verified satisfactorily. Disagreement as to truth raises the question as to whose opinions are of consequence and whether every one must be in agreement before facts can be said to have been verified and truth established. It is at once clear that all scientists in any scientific field may be in agreement as to the facts revealed by some phenomenon with which they are concerned and yet the layman, not qualified to comprehend what are but everyday facts to the scientists, may disagree with them. Does the fact that those unqualified to understand are found to disagree with the trained minds compel us to conclude that the scientists have in their possession only probabilities, not truths? Certainly not. The unqualified and incompetent are eliminated at once. It makes not the slightest difference that the village leader of Zion, Illinois, insists that the world is flat; he is not competent to judge and there is no disagreement among scientists on this subject. But there are various types and degrees of disagreement which make the problems far from simple. Let us suppose that among the scientists the majority are in agreement but there is a minority which hold other opinions. What may the scientific man say as to truth having been established? He may say that the majority of competent scientists believe thus and so and that there is a different view held by others perhaps equally competent to determine truth. He cannot hold that either view represents the truth. He may have an opinion as to which view is the correct one and may express it *as an opinion* provided he is among those competent to render such an opinion and provided his opinion rests upon data equal to those possessed by those whose opinions are to be questioned or accepted. But in no case may his opinion or the opinions of either of the groups be treated as truths; they are merely possibilities or probabilities, more or less strong. In short, it appears that so long as there is room for disagreement among those competent to render a scientific judgment, the research worker must accept the view that he is dealing with probabilities, not truths, and all of his conclusions should be marked by distinguishing and cautionary phraseology.

Let us assume that the scientists in a given field are agreed as to the validity of a certain theory but that their theory is demonstrated to be wrong a generation or a hundred years later. Is the criterion for truth workable only for a given generation or century? Or should the research worker set for himself a standard which will last indefinitely? To accept the latter standard for truth clearly limits the research worker to a much narrower basis than does the acceptance of the former. It represents extreme caution and conservatism, but undoubtedly a desirable conservatism for the true scholar. Few of the best scholars would care to be dogmatic about important theories agreed upon by scientists today because they can see on all sides the revolutionary strides made by science even within a generation. As a consequence they prefer to protect themselves by cautioning their followers that while the present generation of scientists are fairly well agreed as to the truth of a certain theory, a later generation of scientists may learn otherwise. Such precaution doubtless impresses the casual worker as pedantry; in many if not most of the practical affairs of everyday life it probably is pedantic, but in the fields employing truly scholarly research no standard short of this can be accepted. Such appears to be the standard applied by true scholars. It implies at once that they have an adequate perspective in history and philosophy; they know something of the development of the various sciences and civilizations; they have developed a far-reaching philosophy of institutional development, evolution, and of the nature and function of mankind. Adequate ideas and information as to the relativity of things in various civilizations, centuries, and epochs are imperative to the scholar if he maintains truly scholarly standards.

There appear to be, in addition, rather vague concepts of truth, often the plaything in metaphysics and religions, with which scholars can have little to do in a practical sense. The concepts have an ethical connotation and belong in the domain of mysticism.[2] We hear of them in such expressions as "Truth for truth's sake," "Truth crushed to earth shall rise again," "Truth can never be attained by man," "Grace and truth came by Jesus Christ," "Sanctify them through thy truth," "Know the truth and the truth shall make you free." Such vague concepts appear to have in them little if anything with which the scientific mind can work in its attempt to set for itself a workable standard of truth. Consequently we may eliminate them from our discussion. The research worker must have tangible standards with which to work.

This brief discussion should indicate to the would-be scholar the difference between probabilities and truth in a manner that will give him a criterion which is at once scholarly and workable. When a presumption or probability becomes an incontestable fact should be apparent. Since we rule out the vague ethical concept of truth, we may treat truth and certainties as synonymous terms for practical purposes. Truths are verified facts, the manner of verification being satisfactory to all normally minded persons scientifically trained and therefore competent to judge, regardless of the time of verification.

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[2] Bertrand Russell says, "I have heard it suggested by a bio-chemist that mysticism is due to excessive alkalinity of the blood. This particular doctrine may or may not be true, but some equally painful explanation of the mystic emotion is pretty sure to be found before long." Bertrand Russell, "Science," in Charles A. Beard (Ed.), *Whither Mankind* (Longmans, Green and Co., New York, 1928), p. 76.

See also A. S. Eddington, *The Nature of the Physical World* (The Macmillan Co., New York, 1928), Chap. XV, "Science and Mysticism."

The scholar questions all sources of information

Scholarly research implies that the scholar will question all sources of information and in so far as possible seek original or primary evidence. Especially to be questioned are so-called secondary sources. The attainment of this ideal is of such great difficulty that but few persons are really capable of doing scholarly work.

Distinction between primary and secondary sources; between direct and indirect information

Primary or original sources are those back of which the investigator cannot go in his efforts to secure information. It should be noted carefully that the term "sources" refers to individual *statements*, not to individual *documents*. Considerable difficulty usually is experienced in the attempt to classify sources into primary and secondary; the real difficulty is due to the attempt to classify documents rather than individual statements. Primary and secondary sources must not be confused with direct and indirect knowledge. A person who experiments in physics has direct knowledge of the phenomenon observed; the one who reads the report secures an indirect knowledge. Or better yet, if one observes an explosion he has a direct knowledge of it, but if he appears on the scene after it has occurred, observes the wreckage and converses with those who witnessed it, he has an indirect knowledge of it. Is this indirect knowledge a primary source of information? It is the best information he can secure, he can never go behind it for he can never reproduce the explosion so that he can observe it directly, hence it would be called a primary source of information. Of course direct observation is a primary source in the most absolute sense, but an historical investigation is never a science of direct observation. It is a science of indirect knowledge. It is the only method of arriving at past facts. But the records (individual statements) which are least removed from the direct observations are looked upon as primary sources in historical investigation. The best source for the historical investigator—we confine the discussion to documents and exclude such sources as pictures, monuments, and other remains—is a case in which the document has been written by an ocular witness, but even this is quite inferior to the kind of information available to the physicist through direct observation, since observers not only may observe badly but may report the observations very inaccurately.

As a matter of fact—and this statement cannot be overemphasized—the distinction between first- and second-hand documents should not be insisted upon, or indeed urged at all. A document may, and usually does, combine both first- and second-hand statements concerning facts. It is not the document which comes to us at first- or second-hand; it is the individual statement.[3] Most of the so-called "source" or "primary," or "first-hand" documents are composed in part of second-hand statements about facts of which the author has no personal knowledge. To apply the term "second-hand document" to those which contain no original statements is permissible, of course, but is of no practical value in scholarly research which is concerned with the distinction between original and secondary statements. The historian —and this term will include most investigators in the social sciences [4]—cannot have a direct knowledge of past events except in so far as he is dealing with events coming within the scope of his personal experiences; he is compelled to secure an indirect knowledge. Only in this sense may the historical investigator correctly use the term "sources." But it is his duty and problem to secure primary rather than secondary *statements* in so far as it is reasonably possible.

This is one of the simplest and perhaps one of the most outstanding principles that should guide any investigator. To the extent that he fails to do this he weakens his position. Assuming that he does rely upon original sources for his information, the problems of analysis and interpretation which confront him are far from simple. But the farther his sources of information are removed from the original, the more his problems are multiplied and the less scholarly and reliable are his results.

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[3] Certain legal sources such as legislative statutes and court reports may be treated as primary sources quite properly and the volumes containing these sources may be called source books, bearing in mind that they are primary sources from a legal but not from a factual point of view. In the same manner legal treatises and commentaries may be called secondary works in a legal but not a factual sense.

[4] In addition to the historical method, social scientists use the statistical method and the methods of direct observation included under the general head of "field work," the latter comprehending the census, sampling, and case methods. But even much of the data used in statistics and field work is historical in nature, particularly when the records are those gathered by staffs and thus become indirect knowledge of events that have happened and therefore are matters of history.

A wholesome skepticism on the part of the scholar is assumed

A wholesome skepticism on the part of the scholar is assumed; it is a fundamental requisite of sound methodology. To quote Buckle: ". . . it may be said, that to scepticism we owe that spirit of inquiry, which, during the last two centuries, has gradually encroached on every possible subject; has reformed every department of practical and speculative knowledge; has weakened the authority of the privileged classes, and thus placed liberty on a surer foundation; has chastized the despotism of princes; has restrained the arrogance of the noble; and has even diminished the prejudices of the clergy. In a word, it is this which has remedied the three fundamental errors of the olden time; errors which made the people, in politics too confiding; in science too credulous; in religion too intolerant. . . . No single fact has so extensively affected the different nations as the duration, the amount, and above all the diffusion, of their scepticism." [5]

Difficult to prevent mental lapses

It is the eternal problem of the scholar to prevent mental lapses and very few indeed are able to adhere consistently to the apparently simple ideals of scholarly investigation. Some scholars appreciate so keenly the value of scholarly methods and recognize so fully the great difficulties involved in attaining and maintaining the ideals, that they seldom attempt to write for publication. They frequently become destructive critics instead, and often exercise a very wholesome influence on those who are prone to rush into print, after a more or less scholarly investigation, with publications born too soon.

The natural inclination of the human mind, as Langlois and Seignobos so ably point out, is to take no precautions at all, and to treat these matters, which really demand the utmost precision, with careless laxity. While most thoughtful persons would admit the value of scholarly criticism in principle, it is one of those principles more easily admitted than put into practice.[6] They continue: "The spontaneous tendency of man is to yield assent to affirmations, and to reproduce them, without even clearly distinguishing them from the results of his own observation. In everyday life do we not accept indiscriminately, without any kind of verification, hearsay reports, anonymous and unguaranteed statements, 'documents' of indifferent or inferior authority? It takes a special reason to induce us to take the trouble to examine into the origin and value of a document on the history of yesterday; otherwise, if there is no outrageous improbability in it, and as long as it is not contradicted, we swallow it whole, we pin our faith to it, we hawk it about, and, if need be, embellish it in the process. Every candid man must admit that it requires a violent effort to shake off *ignavia critica,* that common form of intellectual sloth, that this effort must be continually repeated, and is often accompanied by real pain."[7]

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[5] Henry Thomas Buckle, *History of Civilization in England* (Longmans, Green and Co., London and New York, 1901), Vol. I, pp. 335-336.

Instinctive methods are not rational

Whoever engages in investigations dealing with past facts and events occupies himself, consciously or unconsciously, with historical methodology and with complicated operations of analysis, criticism, and construction. Beginners, who know little or nothing of the principles of scholarly research, rely on instinctive methods which ordinarily are not rational, and consequently do not lead to scientific truth. It is imperative, therefore, that scientific investigators become acquainted with the principles of scientific methods of investigation.

The reader should dispel from his mind forever the idea that a scholarly investigation is simple and may be undertaken successfully by any one. On the contrary, he should begin at once to analyze carefully the principles of scholarly investigation adhered to by scholars. As he studies these principles he should study himself in order to determine whether he is so constituted as to be able to adhere consistently to such principles. He should not confine himself to one or two writers on methodology but should extend his reading on the subject to as many writers as possible. While they probably agree in general as to the ends to be attained and the general methods to be used, something new and of importance may be learned from each writer. Indeed, something in methodology may be learned from almost any type of book if one learns to look for it. It seems certain that most persons read books for so-called facts or for entertainment and with practically no thought of the methodology lying behind the publication. The methodology is the vital question but it attracts and occupies the attention only of the critic. It is the important part of sound and scholarly reading.

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[6] Charles V. Langlois and Charles Seignobos, *Introduction to the Study of History* (Henry Holt and Co., New York, 1898), p. 68.

[7] *Ibid.,* p. 69.

This much at least must be accepted by the reader at this point as a warning to be heeded: If he has never read a book on methods of critical or scholarly investigation, he should never attempt any investigation, render any report, or engage in any work purporting to be of a scholarly nature until he has done this. His reading, moreover, should comprehend authoritative works on methodology covering the methods employed in regard to both qualitative and quantitative data, otherwise probable disaster awaits the appearance in public of his work. Scholarly men often are merciless to the uncritical writer and charlatan. Particular individuals may escape these consequences for some time, either because their writings are of such little importance or interest as to attract little attention or because their fulminations are so obviously foolish as to be beneath the notice of the scholarly critic. But for the uncritical investigator who hopes to do important work, to hold a responsible position, or to reach the ear of the public, the treatment that awaits him at the hands of the scholarly man may be unpleasant, remorseless, and pitiless.

College students usually deficient in training in methodology

It is a fact to be deplored that colleges and universities do so little to train students in sound methods of investigation. Such a training should enable the selection of those students who are capable of being trained properly, and at the same time afford a well-founded basis for advising those poorly qualified to do scholarly work to turn their efforts in other directions. Few colleges or universities offer formal courses in methodology. A student's years in college are devoted largely to absorbing so-called facts in a manner none too critical, and yet it seems to be quite generally recognized that most students soon forget the mass of facts which they attempt to absorb while in college. The most valuable equipment which they can retain after leaving the college halls, and the equipment perhaps most easily retained, is the ability to find and use intelligently new or forgotten facts when needed. The distinguished scholar, Karl Pearson, says on this point: "The true aim of the teacher must be to impart an appreciation of method and not a knowledge of facts. This is far more readily achieved by concentrating the student's attention on a small range of phenomena, than by leading him in rapid and superficial survey over wide fields of knowledge. Personally I have no recollection of at least 90 per cent of the *facts* that were taught to me at school, but the notions of *method* which I derived from my instructor in Greek Grammar (the contents of which I have long since forgotten) remain in my mind as the really valuable part of my school equipment for life."[8] A student properly trained in methodology carries away with him a certain mental attitude which he cannot lose very easily; it is a part of his mental make-up and dominates, if it does not determine, his method of attacking problems. Adequate training in proper methods of investigation is the most valuable knowledge a student can carry through life, and yet it seldom is given to graduate students and almost never to the undergraduates. It is small wonder that so many graduates from colleges find themselves so helpless when they come into contact with the practical problems of the everyday world. They do not know how to attack new problems, how to gather information, how to study their problems critically. Colleges in general are pumping stations designed to pump facts into students for four years, after which they are turned out into the world without having received training in what appears to be the most important phase of education—the proper methods to use in constructive work.

This defect in student training shows itself frequently to the disadvantage of the American student when he is compared with students graduated from foreign universities, particularly the German. After pointing out that foreign universities long have been ahead of the United States in stimulating in their students a desire to learn new things from their own investigation, Dr. Willis R. Whitney says: "The feeling of our graduating student is that the world is pretty stable and unalterable and that he has just about fitted himself for some hole in it. Yet the fact is that the world is an exceedingly sensitive equilibrium disturbed in some way by every human effort. With the highly trained and useful scientists of history there has seemed to be an unconquerable desire to advance knowledge by their own effort; to extend the human possibilities beyond the text-books of the college, to look into the hidden ways of nature for the purpose of increasing the general good of the race. Perhaps this desire is too idealistic to be common. Possibly few investigators do more than follow their instincts; but why should not we in American universities lead the world in the number and quality of men who, after graduating, still pursue their chosen science as investigators?" [9]

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[8] Karl Pearson, *The Grammar of Science* (Adam and Charles Black, London, 1911), 3d ed., Pt. I, Physical, p. 7, note.

Increasing study of statistics encouraging

One of the encouraging trends in modern education is the increasingly important place given to statistics in the college curriculum. A course in statistics gives a student an excellent training in a certain type of method of research. Although it deals largely with the handling of quantitative data, this in itself is so broad, and the training in scholarly methods of investigation so excellent, that the student trained in statistical methods has a great advantage over those who have not had the benefits of such training. To become a careful investigator in other fields presents a less serious problem to those well-trained in statistical methods. While such training doubtless does much to correct the present defective methodology, a more ideal situation will prevail when students have access to a broader course in methods of research in addition to a course in statistical method.

[9] Willis R. Whitney, "The National Need of Scientific Research," *Yale Review* (1917), Vol. VI, pp. 611-612.

Scientific method requires critical discrimination

Another implication or requirement of scientific method is critical discrimination. It is the *sine qua non* of all science and the requisite of all sound knowledge. The scientific mind attempts to apply scientific methods of investigation to all the problems of life. Scientific method is probably the chief means by which the sufferings of mankind are alleviated. In a general sense the mental activities which lead to scientific knowledge are those set forth by Wolf: (1) the processes of observation and (2) the processes of inference.[10] A fuller discussion of these processes is deferred until later. The reader is referred to standard works in logic for an adequate discussion of such mental processes. We may agree with Wolf at this point when he says that by the former is meant ". . . the act of apprehending things and events, their attributes and their concrete relationships, also the direct awareness of our own mental experiences. By inference is meant the formation of judgments (beliefs or opinions) on the strength of, or as a consequence of, other judgments already formed, it may be, on the ground of observations, or only entertained provisionally either for further consideration, or for the sake of argument." [11]

In the exact sciences like chemistry and physics observation of phenomena may take place under conditions controlled and repeated by the scientist, and the procedure may be reduced to routine although perhaps very technical in nature. In the social sciences, however, practically all of the observation must be made under circumstances to some degree beyond control, and exact repetition in order to secure repeated observations is practically impossible. As a result the precautions which must necessarily surround such observation are many and the results which are truly scientific doubtless are few indeed. Critical discrimination is taxed to the utmost.

Inference may be inductive or deductive. In inductive inference an effort is made to determine some kind of relationship, principle, order, or class-character in the phenomena observed. The method is one of working from the particular to the general.

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[10] Abraham Wolf, *Essentials of Scientific Method* (George Allen and Unwin, Ltd., London, 1925), pp. 17-18.

[11] *Ibid.*

Deductive inference, on the other hand, works from the general to the particular. It is the process of applying hypothetical concepts or previously established inductive conclusions to particular cases.

In the social sciences the deductive method has been far more common than the inductive, but in recent years pronounced efforts have been made to inject new life into these sciences by an increased use of the inductive method which has played such an important rôle in the exact sciences. The increased use of statistical method has been a most favorable indication of the improved health of the social sciences. But the difficulties and limitations involved in the use of the inductive method in these sciences have made imperative the development of sound principles in their methodology in order to aid research workers in the cultivation of the proper critical discrimination. Such discrimination apparently is not innate; it comes only with study, experience, and constant watchfulness on the part of the scholar.

Scientific method implies ability to classify objectively

The very essence of scientific method is sound and useful classification. Karl Pearson put it succinctly when he said: "The classification of facts and the formation of absolute judgments upon the basis of this classification—judgments independent of the idiosyncrasies of the individual mind—essentially sum up the *aim and method* of modern science. The scientific man has above all things to strive at self-elimination in his judgments, to provide an argument which is as true for each individual mind [he implies a normally minded person scientifically trained] as for his own. *The classification of facts, the recognition of their sequence and relative significance is the function of science,* and the habit of forming a judgment upon these facts unbiased by personal feeling is characteristic of what may be termed the scientific frame of mind."[12] Further he says: "Let us be quite sure that whenever we come across a conclusion in a scientific work which does not flow from the classification of facts, or which is not directly stated by the author to be an assumption, then we are dealing with bad science. Good science will always be intelligible to the logically trained mind, if that mind can read and translate the language in which science is written."[13] With these conclusions all scientifically minded persons will be compelled to agree. Again he says: "Now this is the peculiarity of scientific method, that when once it has become a habit of mind, that mind converts *all* facts whatsoever into science. The field of science is unlimited; its material is endless, every group of natural phenomena, every phase of social life, every stage of past or present development is material for science. *The unity of all science consists alone in its method, not in its material.* The man who classifies facts of any kind whatever, who sees their mutual relation and describes their sequences, is applying the scientific method and is a man of science. The facts may belong to the past history of mankind, to the social statistics of our great cities, to the atmosphere of the most distant stars, to the digestive organs of a worm, or to the life of a scarcely visible bacillus. It is not facts themselves which make science, but the method by which they are dealt with. The material of science is co-extensive with the whole physical universe, not only that universe as it now exists, but with its past history and the past history of all life therein."[14]

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[12] Pearson, *op. cit.*, p. 6.

Classification probably is the earliest and simplest method of discovering order in phenomena and doubtless the first method employed in every science. It must be employed long before a deeper insight into facts, which is required for the more advanced methods of science, can be applied. Many sciences remain for a long time in the merely classificatory stage.[15]

Scientific method employs comparison and analogy

Comparison and analogy are essentials of scientific methodology. One may arrive at important truths by comparison of objects, facts, and relationships with others of the same class or type which are understood better. When the resemblance falls short of a close class resemblance, it is referred to as analogy.

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[13] *Ibid.,* p. 10.

[14] *Ibid.,* p. 12. *Cf.* Frederick J. Teggart, *Theory of History* (Yale University Press, New Haven, 1925), p. 155, for the same thesis.

[15] For a further discussion of this subject, see Wolf, *op. cit.,* p. 30. On the classification of the sciences, see Henry E. Bliss, *The Organization of Knowledge and the System of the Sciences* (Henry Holt and Co., New York, 1929), Pt. III, "The System of the Sciences."

The service of analogy consists in originating hypotheses and lines of research. It is preliminary and auxiliary to the inductive methods of research. The process is one of apperceiving new or strange phenomena in the light of what is known already of other similar or analogous phenomena, and it has been very fruitful in the advance of science. The use of comparison and analogy is fraught with dangerous pitfalls and should be scrutinized carefully.

Scientific method implies ability to generalize and systematize

Lying at the bottom of and common to all scientific methods are the processes of analysis and construction, or synthesis. After a careful analysis of events or objects into their component parts the elements may be constructed in a manner to demonstrate new relationships, new principles. All human beings of intelligence feel the need of and seek for order in things as they find them. Man begins with the trial and error method; he places facts and events in relation to one another in a manner which he thinks will yield some orderly result. Trial and error methods give rise to cumulated experiences which aid in the attempts to discover the proper relationships. Hypotheses or suppositions are used as tentative bases for testing out these relationships. While some hypotheses may be true even though not susceptible of verification, no hypothesis which cannot be subjected to the tests of observation has any standing in science. Some false hypotheses have been serviceable, of course, in leading to new lines of investigation, and others which could not be demonstrated to be true at certain times have been upheld later as a result of improved scientific instruments and methods.[16]

Karl Pearson has insisted that, since scientific method consisted in orderly classification of facts *followed by the recognition of the relationship and recurring sequences* and since scientific judgment is the judgment based upon this recognition and free from personal bias, the so-called philosophical method, which reaches its judgments by some obscure process of internal cogitation, is unscientific.[17] On this point there is some division of opinion. The reasonable view seems to be that neither philosophy nor science can dispense with the other. Philosophy is an attempt to get at knowledge of the realities which are concealed behind apparently obvious phenomena; it is the speculative aspect of science. The philosopher without an appreciation of the methodology of the exact sciences is as inadequate as the scientist who is not a philosopher. Neither can the scientist, exact or social, ignore the methods of logic since the method of systematic reasoning must be employed in the examination of the validity of all premises.[18]

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[16] *Cf.* Wolf, *op. cit.*, pp. 20-24.

[17] Pearson, *op. cit.*, pp. 18-19.

Some writers go far enough with Pearson, however, to say that philosophy probably has made greater claims and achieved fewer results than perhaps any other branch of learning.[19]

Sound methodology in the social sciences calls for constructive imagination and critical insight, and the critical scholar doing research work is assumed to be able to deal with and construct generalities and systems. Wolf, peculiarly enough, insists that generality and system apply only to the exact sciences and that history is not a science.[20] Buckle takes a position directly opposed to Wolf and says quite correctly: "It is clear that they who affirm that the facts of history are incapable of being generalized, take for granted the very question at issue. Indeed they do more than this. They not only assume what they cannot prove, but they assume what in the present state of knowledge is highly improbable. Whoever is at all acquainted with what has been done during the last two centuries, must be aware that every generation demonstrates some events to be regular and predictable, which the preceding generation had declared to be irregular and unpredictable: so that the marked tendency of advancing civilization is to strengthen our belief in the universality of order, of method, and of law. This being the case, it follows that if any facts, or class of facts, have not yet been reduced to order, we, so far from pronouncing them to be irreducible, should rather be guided by our experience of the past, and should admit the probability that what we now call inexplicable will at some future time be explained. This expectation of discovering regularity in the midst of confusion is so familiar to scientific men, that among the most eminent of them it becomes an article of faith: and if the same expectation is not generally found among historians, it must be ascribed partly to their being of inferior ability to the investigators of nature, and partly to the greater complexity of those social phenomena with which their studies are concerned.

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[18] On the function of logic in scientific method, see especially F. W. Westaway, *Scientific Method* (Blackie and Son, Ltd., London, 1924), 3d ed., pp. 25-27 and Chap. XIII.

[19] *Cf.* Westaway, *op. cit.*, p. 41, who upholds the same view. See also A. d'Abro, *The Evolution of Scientific Thought From Newton to Einstein* (Boni and Liveright, New York, 1927), pp. 373 *ff.*; Alfred N. Whitehead, *Science and the Modern World* (The Macmillan Co., New York, 1925), Chap. IX, "Science and Philosophy"; and C. D. Broad, *Scientific Thought* (Harcourt, Brace and Co., Inc., New York, 1923), Introduction, "The Subject-matter of Philosophy, and its Relations to the Special Sciences." A different point of view is expressed by John Dewey, "Philosophy," in Wilson Gee (Ed.), *Research in the Social Sciences* (The Macmillan Co., New York, 1929), Chap. VIII, but especially pp. 264-265. President Butler of Columbia University appears to put philosophy on a higher plane than the sciences. See especially the discussion by Truman L. Kelley, *Scientific Method: Its Function in Research and in Education* (Ohio State University Press, Columbus, 1929), pp. 176-181, in which he takes Dr. Butler to task for his contentions.

[20] *Op. cit.*, p. 11. The issue as to whether history is a science has been stated simply and adequately by Dr. Arthur M. Schlesinger, "History," in Wilson Gee (Ed.), *op. cit.*, pp. 229-230. He says: "If the term is confined to subjects where the phenomena operate in accordance with fixed law, History has not yet established its right to the label. If it attaches only to subjects in which the conclusions can be tested by experimental verification, obviously History is not so to be classed. But if the term may be applied to fields in which the methods of inquiry are critical and objective and the results win a consensus of acceptance by trained investigators, then History deserves the name as much as any branch of physical science." G. E. G. Catlin, as an example of those who insist that history is not a science, says in his *Science and Method of Politics* (Alfred A.

"Both these causes have retarded the creation of the science of history. The most celebrated historians are manifestly inferior to the most successful cultivators of the physical science . . .".[21]

The awareness of the difficulties of employing sound principles of methodology in the social sciences doubtless has made social scientists more keenly alert as to the fundamentals of sound methodology than are many exact scientists who find their methodology simple and easily followed. The fact that the social

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Knopf, New York, 1927), p. 91: "History is not and cannot be a science. To speak of it as such involves a complete misconception. . . . Historical treatment may, indeed, be 'scientific,' that is, accurate and systematic; but accuracy is not science." *Cf.* Stuart A. Rice, *Quantitative Methods in Politics* (Alfred A. Knopf, New York, 1928), Chaps. II-III, and Jacques Rueff, *From the Physical to the Social Sciences* (The Johns Hopkins Press, Baltimore, 1929), *passim.* Rueff's thesis is that the logical method for the social sciences must be the same in kind as that of the natural sciences.

[21] Buckle, *op. cit.*, pp. 6-7.

scientist has been placed on the defensive has tended perhaps to make him more critical and more thorough-going than the average exact scientist, more conscious of the processes and of the larger implications of what he is doing.[22]

Scientific method implies empirical verification; restricted to exact sciences

It has been indicated already that if the scholar is engaged in investigations in the exact sciences such as chemistry and physics he may gather his facts by direct observation through experimentation. He can produce the desired conditions repeatedly and by careful observation arrive at conclusions based upon facts observed. He is not compelled to rely upon another person's reports, that is, upon indirect evidence. The investigator in the fields of the social sciences, however, has few opportunities for direct observation.[23] His method is logical rather than technical. Most of his investigations are of an historical nature; he is confronted with the task of investigating events that have happened and can never be reproduced for purposes of direct observation. In other words, empirical verification belongs to the exact sciences in which the methods of research are relatively simple although often extremely technical in nature, in fact so technical and so different in the different fields that but few scientific investigators ever are able to master the technical methodology in more than one field.

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[22] One social scientist has insisted to the writer that he is entirely unsympathetic with the apologistic attitude for the short-comings of the social sciences and has said: "I think this emphasis has been over done. I do not for a moment admit that our subject-matter is more difficult or more complex than that of any other science. At least not intrinsically so. We have been backward in achievement for three reasons: first, because of the 'normative' incubus, that is to say, the tendency to evaluate as 'good' or 'bad' in terms of ends, we get the moral and ethical mixed up, there is too much 'preaching'; second, the 'complexity confusion,' we excuse ourselves from the necessity of being inventive and originative in our techniques because we say our subject-matter is too complex. In reality this is an 'escape from reality mechanism'; and third, lack of enterprise, ingenuity and inventiveness in our approach to our problem." The same general position is taken by George A. Lundberg, *Social Research* (Longmans, Green and Co., New York, 1929), Chap. I, especially pp. 12-17. *Cf.* F. Stuart Chapin, *Cultural Change* (The Century Co., New York, 1928), p. 414, and Rueff, *op. cit.*, Pt. II, Chap. V, and Pt. III, Chap. XII. Rueff says (p. 65): "We shall find in the social sciences all the characteristics of the sciences properly called 'scientific.'" The writer thinks this position is extreme and untenable. What Rueff is really saying is that since formal logic and analysis are common to all sciences, therefore scientific methodology in all sciences is the same and all the sciences really are one. This appears to be an unduly simplified concept and one that does not comprehend all the realities involved.

[23] In so far as methodology is concerned, psychology belongs more to the exact than to the social sciences since it employs to a large extent observation, experiment, and induction. In addition, however, introspection enters in as a disturbing factor since much of the knowledge of the mind is obtained in this manner rather than through the senses. This of course makes the methodology of psychology more complex and the ascertainment of facts more difficult than in the exact sciences. *Cf.* Westaway, *op. cit.*, Chap. III; Robert S. Woodworth, "Psychology," in Wilson Gee (Ed.), *op. cit.*, Chap. IV; and H. P. Weld, *Psychology as Science* (Henry Holt and Co., New York, 1928).

In the social sciences methodology is largely logical. Most events can be known only indirectly by traces left behind, excepting, of course, what may be learned through direct observation in field work and through the application of the statistical method to existing data. These traces may be (1) material evidence, such as monuments, canals, remains of explosions, volcanic eruptions, fabricated articles, pictures, vocal records, and similar objects, or (2) written evidence. Vincent classifies these traces as (1) those which man has consciously recorded for the purposes of transmitting information such as written materials, oral tradition, and artistic productions; (2) relics of man's activity, whether written or otherwise, which have come down to us from the past without the conscious intention of imparting connected information; and (3) those which have the qualities of the first two classes, such as inscriptions, monuments, and public documents of certain classes.[24]

It is with the problems of the historical investigator who uses in the main written evidence that we are concerned primarily and to him empirical verification is practically denied, thereby increasing his difficulties in securing scientific conclusions. The problems of the scientist in the exact sciences, although difficult from a technical standpoint, are relatively simple in so far as scientific methodology is concerned. His methodology merely involves the schooling of himself in careful observation and accurate reporting of the observations. The social scientist, being compelled to rely upon traces left behind, is confronted with many and difficult problems. His is not, in general, a science of direct observation; only the traces and evidence are observed directly. From these traces and records he seeks, by careful reasoning and logical analysis, to reproduce in his mind the original facts which gave rise to the evidence left behind. The traces, records, or documents in his possession are the starting point from which he endeavors to work back to the facts which are his goal. In the exact sciences (and perhaps one should add the field work of social sciences), where direct observation is used, the fact itself is the starting point, and the conditions for correct observation may be summarized as follows:

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[24] John M. Vincent, *Historical Research* (Henry Holt and Co., New York, 1911), pp. 14, 18.

(1) The observer must be placed where he can observe correctly.

(2) He must have no desire to obtain a particular result.

(3) He should record his observations immediately in an exact system of notation.

(4) He must give a precise indication of his method.

It is not to be inferred that logical methods are not applied also in the exact sciences. Indeed the technical methods of the exact sciences are intimately connected with logical methods at all times; in nature they may be precedent to, subsequent to, and auxiliary to the methods of logical reasoning. They are aids either to observation or inference. While the technical methods differ widely in the different sciences, the logical methods, for the most part, are common to all and are the only scientific methods that can be studied with advantage by those men who are not trained in the methods of the exact sciences as well as by those who are so trained. This work of necessity is concerned to a large degree with the logical methods of science.

In the social sciences the simple principles of observation followed in the exact sciences are never completely followed by the authors of documents, and for these reasons *documents are inferior to observations*. In the words of Langlois and Seignobos, "It would be useless, therefore, to ask whether there have been chances for inaccuracy; *there always have been*, and it is just this that distinguishes a document from an observation." [25]

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[25] *Op. cit.*, p. 174. The writer does not wish to leave the impression that an exact science such as physics really does not imply something more than the application of the simple principles of methodology outlined above. A perusal of Dr. A. S. Eddington's recent work on *The Nature of the Physical World*

Scientific method and prediction

It has been urged repeatedly that the chief function of science is to predict, that in fact the real criterion of science is the ability to predict. Undoubtedly science is most spectacular and at its best when it enables prediction. But *accurate* prediction is confined almost solely to those fields of the exact sciences in which the ability of human beings to control or affect the results is negligible if not entirely absent. We are quite accustomed to accurate predictions in astronomy but in the social sciences such accurate prediction is a failure. For this reason many persons have insisted that the social sciences are really not sciences. It undoubtedly is true that if capacity to predict accurately, not approximately, be considered a requisite of science then the social sciences fall far short in this respect.

Prediction in the social sciences involves questions of interference and control. Any social prediction may be subjected to interference and possible defeat if the mass of people have any desire to take advantage in a pecuniary way of the forecast. Any attempt to forecast a change in the price level probably will be subjected to such interference as soon as it is discovered that the prediction shows a high degree of reliability, due to the desire of the mass of people to take advantage of and anticipate the forecasted change, thus defeating in part, if not entirely, the value of the forecast. A statistical prediction as to the future birth or death rates may or may not be affected in this manner since a multitude of factors are involved. It is possible, however, that a forecast of an increase in the birth or death rates might cause the masses to check the rate, thereby frustrating the working out of the forecast.

Prediction and social control

The ability to forecast or predict in the fields of social and other sciences (outside of perhaps astronomy and geology) raises the question of conscious social control. If, by a study of past and present events, it is possible to determine even approximately future events, the question arises as to whether it may not be

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would dissipate any such idea. To him the world of physics is a world of symbols and shadows usually beyond the comprehension of the layman. See also Rueff, *op. cit.*, Pt. II, Chap. IX.

desirable to change or control future events according to some standard of desirability. In chemistry the procedure is common; we do not stop with analytical but proceed to synthetic chemistry also. We make what we think we want. In the social sciences the factor of control raises all the questions of the proper criteria to be applied in control. Who is to decide what standards are best? On this point there is no agreement.[26] In general the standards probably are set by those who have the power to enforce them. They are not determined by conscious or scientific method based upon carefully calculated criteria by those most competent to judge. But that such control should be undertaken seems generally agreed upon. Mr. Hu Shih expressed this general belief and point of view, with the usual vagueness, when he said ". . . that civilization which makes the fullest possible use of human ingenuity and intelligence in search of truth in order to control nature and transform matter for the service of mankind, to liberate the human spirit from ignorance, superstition, and slavery to the forces of nature, and to reform social and political institutions for the benefit of the greatest number—such a civilization is highly idealistic and spiritual. This civilization will continue to grow and improve itself." [27] Bertrand Russell has said with respect to the same question: "Hitherto, the practical applications of science have been mainly directed to modifications of our material environment. . . . While we alter the environment to suit ourselves, we do not much alter ourselves to suit each other. The reason is, of course, that the sciences that deal with the formation of human character are far less developed than those that deal with the inanimate world. This, however, is rapidly changing. It is highly probable that in a hundred years we shall have acquired the same control over the characters of children that we now have over physical forces. . . . But what men will make of these powers when they come to possess them, it would be rash to prophesy. Doubtless they will make something which, to our inherited standard of values, would seem horrible; but to them, one must suppose, it will seem good. . . .

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[26] See also Robert W. Kelso, *The Science of Public Welfare* (Henry Holt and Co., New York, 1928), Chaps. I and XXVI. His thesis on this point is summarized thus (p. 17): "There is thus far no truly satisfactory definition of human progress; hence there can be no final assurance as to what constitutes human welfare. We know a great deal about it—as we know much about the riddle of life—but the riddle itself eludes us." Mr. Kelso is willing, however, to hazard an opinion as to what we should mean by public welfare. He says (p. 405) it is "that objective in social service which affords to the individual the highest degree of freedom of thought and action commensurate with the like privileges in his fellows, which holds out to him an equal opportunity to secure for himself and his dependents the advantages of place, property and power conducive to his happiness, his contentment and the necessities of his existence; and yet which affords to Society collectively the continuing opportunity to live at peace, functioning as the fountain of authority from which flow the means for attaining this welfare ideal." This is probably as close to the prevailing general belief as any one can come. *Cf.* also F. S. Marvin (Ed.), *Science and Civilization* (Oxford University Press, Oxford, England, 1923), Chap. XII, "Science and Human Affairs" by F. S. Marvin. As to whether there is human progress Marvin insists that all signs so indicate and takes issue with Oswald Spengler who took the opposite view in his *Decline of the West*, a translation by Charles Francis Atkinson of Spengler's *Untergang des Abendlandes* written in 1918 (Alfred A. Knopf, New York, 1926). Marvin likewise takes to task Dean Inge for his pessimistic views as to social progress. See also Howard Odum, *Man's Quest For Social Guidance* (Henry Holt and Co., New York, 1927), *passim*, but especially Chap. IV, "Society and the Good Life."

An enlightening and penetrating point of view is that advanced by Walter Lippmann in his *A Preface to Morals* (The Macmillan Co., New York, 1929).

"A good community is one that those who live in it think good; and that, at least, the scientific educators of the future will almost certainly be able to secure." [28]

The difficulty of applying scientific method in the working out of human relations has been pointed out well by Westaway. He says: "The difficulty arises from the fact that, in attempting to find a solution of any human problems, values have to be considered that cannot be brought under physical law and therefore fall outside the scope of science. When we try to interpret such values in terms of objective fact, we seem to be up against a granite wall. The most abstruse problems of science seem to be simplicity itself compared with problems involving human interests. The human element is incalculable.

"It is an impressive fact that the deepest thought, the most brilliant talents, the shrewdest sagacity, the most earnest and scrupulous conscientiousness, have contributed to the problems of philosophy and history, and yet have come to no common agreement. Eternal enigmas are always reproducing themselves in such a form as to defy the logician's challenge.

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[27] Hu Shih, "The Civilization of the East and the West" in Charles A. Beard (Ed.), *Whither Mankind* (Longmans, Green and Co., New York, 1928), p. 41.

[28] Bertrand Russell, "Science," in Beard (Ed.), *op. cit.*, pp. 71-72.

"And yet, just as there are pre-eminently successful investigators in the world of science, so there are authorities equally well recognized for their impartial and searching investigations into problems involving the consideration of human values."[29]

It thus appears clear that if the ability to predict accurately is a requisite of science then the social sciences cannot be ranked highly as sciences. This is due not only to the difficulty of securing more than approximate data for prediction but to the fact that social predictions either would be discounted or rendered partially if not entirely futile in those cases in which society wishes to anticipate the forecast. The social sciences are deficient also when the question of control is raised, regarding the methods, criteria, and desirability of which there is no agreement.[30]

The fundamental character of methodology in the social sciences

Despite the handicaps under which social scientists labor in applying their principles of scientific methodology, they deal with problems which are far more fundamental in nature than do the exact scientists, for the simple reason that they deal with the questions of human relations. Exact scientists through inventions and discoveries may and have brought to pass tremendous advances in the various mechanisms which man uses in his daily life, and yet if the social, political, legal, economic, and religious relations of individuals and nations are not so ordered as to keep pace with the rapid developments in the fields of the exact sciences it well may be questioned whether the great mechanical advances of this modern age may not be factors which will aid in encompassing the ruin of modern civilization. The question has been raised many times. It became particularly impressive during the World War. Science had made the weapons of war so horrible and effective that it appeared that entire nations might be destroyed. It behooves the world, therefore, to do all in its power to effect advancement in the social sciences if humanity is to secure the full advantages of the impressive and far-reaching developments which are now taking place in the exact sciences.

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[29] *Op. cit.*, p. xi.

[30] For an enlightening discussion of the growth of methodology in the social sciences, particularly in sociology, see Albion W. Small, "Fifty Years of Sociology in the United States (1865-1915)," *The American Journal of Sociology* (May, 1916), Vol. XXI, No. 6, pp. 721-864. On the place of prediction in the social sciences see his pp. 863-864. See also Allyn A. Young, "Economics," in Wilson Gee (Ed.), *op. cit.*, Chap. II. For a further discussion of this subject see pp. 268-269 below.

More than ever has it become necessary to take stock of our social practices, to examine them and to see just where we are tending and why. And all of this calls for the very highest type of methodology from the very highest type of mind. Social scientists must be not only scientists in every sense of the term but they must be men of vision, of perspective, and of broad sympathies and understanding as well. It may make relatively little difference in the accomplishments of the exact scientist whether he be a law-abiding citizen, a man of enlightened self-interest, a vicious character with criminal instincts, or what he be, but in the social scientist it does make a difference. The social scientist has as a methodology one which is more approximate and therefore more difficult; as raw material he has human beings with all their endless differences and reactions; and as a scientist he has as an additional problem the necessity of securing the proper philosophy and outlook on life in order to bend his scientific efforts in the proper direction. Certainly his task is not only fundamental but exceedingly difficult, and his difficulties are magnified by the fact that his efforts are less appreciated and less generously supported than are those of the exact scientist. The public has less appreciation of the intangible and indefinite than of the tangible and definite. The exact scientist manifests in a spectacular manner these latter characteristics and as a result is supported and subsidized without question. The social scientist is doubted and ignored, if not secretly scorned; and yet if rationality means anything at all it means that human welfare cannot be advanced surely and effectively without his efforts.

If these observations be true then it naturally follows that those persons embarking upon a life work in the social sciences are choosing a profession fraught with a multitude of difficulties and the beginner should be aware of the fact. It is difficult indeed to point to social scientists who have been effective in recharting the course of human progress in the manner so common to the exact scientists. Who can point to a social scientist who, through applying some scientific social principle, has affected human welfare to the extent that Kepler or Michael Faraday or Thomas Edison has done? As a matter of fact, the great mass of people care little about what the social scientist does or says provided their material welfare is advanced by the exact scientist as it has been done in recent decades. Working under these handicaps the social scientist must realize that the possibilities for achievement and distinction, as they are generally indicated, are almost infinitely less than for his brothers in the exact sciences. Workers in these fields can only express a hope rather than a well-founded belief that they may be among those scientifically minded persons who may accomplish something of real value in this world.[31]

Scientific method implies a knowledge of what others have done in the field

Mr. Strohl put it well when he said: "Apart from the activity of a genius, three things are chiefly necessary for realizing profitable scientific work: First, clear, precise formulation of the problems; second, sharp observations in field, laboratory, or museum; and third, the knowledge of what others have already done on a subject. The last is the special domain of bibliography." [32]

Only the unwise and the uninitiated attempt to work ahead before learning what others have done in the field. Someone has put it bluntly: "Only fools refuse to learn from the experiences of others." This being so, it naturally follows that when a scholar undertakes to investigate a question he attempts to examine all the available data bearing upon the subject which are worth his attention and to which he can secure access within reasonable time and at reasonable expense. Logically and scientifically a better statement is that he should examine all existing material upon the subject since stopping at any point short of completeness means incompleteness. If there are a thousand sources of information on a question and the investigator sees 999 of them it well may be true that failure to see the last one may result in the vitiation of his conclusions since the thousandth source may be the most valuable one. While this standard is the ideal one, in practical life it seldom can be attained. Were a research worker to strive for such a standard he could produce relatively little. Consequently judgment and discretion must be admitted as practical but dangerous factors. An experienced scholar usually will know in general the best sources and will know when his evidence is sufficient, nevertheless it remains true that he may find himself tripped due to some oversight on his part. To the extent that he limits his field of investigation he reduces the risks which he is incurring and this, of course, explains the narrowness of the field in which the most specialized scientists work.

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[31] *Cf.* William F. Ogburn and Alexander Goldenweiser (Eds.), *The Social Sciences and Their Interrelations* (Houghton Mifflin Co., Boston, 1927), *passim,* but especially Chap. XXXIII by Morris R. Cohen on "The Social Sciences and the Natural Sciences"; Floyd N. House, *The Range of Social Theory* (Henry Holt and Co., New York, 1929), Chaps. I, XXXVII, and XXXVIII; Gee (Ed.), *op. cit., passim;* Howard W. Odum, *op. cit.,* Chaps. II, III, and XXXIII; Teggart, *op. cit., passim,* but especially Chaps. XIII and XVI; James Harvey Robinson, *The Mind in the Making* (Harper and Brothers Publishers, New York, 1921), *passim;* Joseph Mayer, *The Seven Seals of Science* (The Century Co., New York, 1927), *passim,* but especially Chap. XIV; Thorstein Veblen, *The Place of Science in Modern Civilization* (B. W. Huebsch, New York, 1919), Chaps. I, II; and G. E. G. Catlin, *The Science and Method of Politics* (Alfred A. Knopf, New York, 1927). The student in the social sciences should find it profitable also to read such books as Harry Elmer Barnes, *History and Prospects of the Social Sciences* (Alfred A. Knopf, New York, 1925), and Howard Odum (Ed.), *American Masters of Social Science* (Henry Holt and Co., New York, 1927). See also Walter E. Spahr, "Pick-Axe Scientists," *The Scientific Monthly* (April, 1929), Vol. XXVIII, pp. 327-330.

[32] J. Strohl (Director of the *Concilium Bibliographicum,* Zurich), "The Scope of Bibliographies," *Science* (February 26, 1926), Vol. LXIII, No. 1626, p. 219.

It is very important for the beginner that he comprehend this point; and in those cases in which he is free to choose his subject for research he should select a specialized subject narrow enough in scope to be examined carefully and thoroughly within the time at his disposal. It is his duty as a scholar to spare no pains or begrudge any expenditure of time or energy necessary to complete an exhaustive study of his subject. A degree of reasonableness in standards always is a consideration but to the extent that he falls short of the absolute, imperfection creeps in and he is open to criticism. The extent to which he permits this measures, of course, the standards of his scholarship; and scholarship is a relative thing. It seems, however, that most beginners appreciate little or not at all the wisdom of limiting the scope of their subjects for research and should profit by consulting with more experienced workers in the field.[33]

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[33] For a fuller discussion of this subject, see pp. 138-140 below.

Scientific method assumes proper technique and good form

A portion of this work is devoted to scientific technique and good form since scientific methodology implies these things. There are those who insist that questions of technique and good form are minor matters and that content alone is of importance. It is true that the content is of primary and the form of secondary importance, yet it is quite the usual thing to push this argument to a point which ignores good form. The persons who do this belong to the same class as those who insist that clothes do not make the man. The answer is the same in both cases. Just as poor clothes do not improve the man, poor form does not make the content better; the contrary is probably true in both cases. Good form not only does not impair the content but, as already indicated, serves in a remarkable degree as a guarantee that it will be improved. In addition, first appearances often are determining factors. If a manuscript comes to the reader, whether critic or publisher, in poor form, he is suspicious at once and may feel justified in deciding to proceed no further into the manuscript, on the theory that if a writer is not sufficiently interested in his work to put it into careful form he is also unreliable as to content. On the other hand, the presentation of an attractive manuscript scrupulously done attracts the reader's eye and invites him to investigate the contents. It is an earmark of the finished scholar. Nothing is to be gained by poor technique and form; much will be lost. Everything is to be gained by proper technique and form and nothing can be lost.

Proper procedure in the compilation of the bibliography, in the use of footnotes, and in all other matters of technique, not only makes the work more scholarly in appearance but insures a greater degree of care and accuracy on the part of the research worker. It not only forces the worker to greater thoroughness but is the greatest time saver that can be devised in scholarly research. Vacillation in his method of doing things causes the worker endless uncertainty and worry and compels him to retrace his steps many times. Once a research worker masters proper and scholarly technique his problems are simplified. In compiling his bibliography he makes complete citations, knows when they are complete, has a logical and consistent form, and once this task has been completed he is not compelled to repeat his efforts. This completed bibliography enables him to make complete, consistent, and exact citations in his footnotes, another conservation in time. All other questions of proper technique result in economy of time and make it easy for the worker to detect irregularities, loopholes, and inconsistencies in his work. Proper technique and good form are not the only earmark of a genuine scholar but they are one. Poor technique and form are a mark of defective scholarship and an outstanding one.

CHAPTER II

QUALITIES AND APTITUDES DEMANDED OF THE SCHOLAR

An interesting and one of the best accounts of what constitutes a scientific mind is found in Francis Bacon's flattering description of himself as paraphrased by the editor, James Spedding, in the English Preface to the *De Interpretatione Naturæ Procœmium*: ". . . a mind at once discursive enough to seize resemblances, and steady enough to distinguish differences; a mind eager in search, patient of doubt, fond of meditation, slow to assert, ready to reconsider, careful to dispose and set in order; not carried away either by love of novelty or by admiration of antiquity, and hating every kind of imposture; a mind therefore especially framed for the study and pursuit of truth."[1]

Westaway put it well when he said of the person who wishes to master scientific method: ". . . he must follow the history of Science, and see how one faulty method has been superseded by another, which, in its turn, has itself been superseded, so difficult has it been to discover the principles of the true method; he must learn to get at the exact meaning of all his terms; he must learn to eliminate all personal bias from his facts; he must ever be on his guard against hasty generalizations; he must ever be ready to give up a pet hypothesis, once the facts are against him, and he must never, on any account, allow his hypotheses to masquerade as facts—'hypotheses are cradle-songs which lull the unwary to sleep'; he must learn to balance probabilities; he must remember that even the best conclusions of Science are never more than in a high degree probable; and he must study the original records of successful investigators."[2]

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[1] *The Works of Francis Bacon* (Hurd and Houghton, New York, 1872), Spedding, Ellis, and Heath ed., Vol. VI, p. 435.

For a discussion of the qualifications of the investigator in so-called practical problems, see J. Eigelberner, *The Investigation of Business Problems* (A. W. Shaw Co., Chicago, 1926), Chap. III.

The scholar must be intellectually honest

Since a scholarly investigation implies an unremitting search for truth, the would-be scholar must be intellectually honest without qualification. Intellectual honesty is attained only as a result of effort and constant watchfulness on the part of one's self. A careful study of the principles of sound scholarship with a firm resolution to adhere faithfully to them will do much to make one intellectually honest, but it probably is true that it is more easily attained by those who at the same time are intentionally truthful as a result of some careful religious or ethical training. On the other hand there are many exceptions to this statement which will occur to the reader, for it is a well-known fact, as Vincent points out, that the "love of truth is not regulated by nationality, rank, education, or religious connection. In lying there has been no distinction of persons, and the temptation to deviate just a little from the truth has been fatal to specimens of all classes of mankind. Therefore, general moral character also is only a presumption, not a proof, of accuracy."[3] One need not search far to find outstanding persons who pride themselves on being religious leaders, who are notoriously unscholarly and uncritical in their methods. They unconsciously advertise the fact to the scholarly world that they know almost nothing about the first principles of critical scholarship. Nevertheless, it is probably true that those persons already imbued with ideas of honesty and integrity have a keener appreciation of what is involved in a search for truth and are more susceptible to the principles of scholarly methods. It is well understood that there are many persons who are not affected by what many others feel is a social stigma attaching to untruthfulness. For such persons the problem of becoming intellectually honest and careful searchers after truth becomes magnified to such an extent as to be almost insurmountable.[4]

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[2] F. W. Westaway, *Scientific Method* (Blackie and Son, Ltd., London, 1924), 3d ed., pp. 5-6. Those readers interested in a brief history and analysis of the methods of leading scientists and philosophers of the past, particularly in the field of sociology, should consult in addition to this book such works as Floyd N. House, *The Range of Social Theory* (Henry Holt and Co., New York, 1929), and Pitirim Sorokin, *Contemporary Sociological Theories* (Harper and Brothers Publishers, New York, 1928). Professor F. Stuart Chapin in his editor's introduction to Professor Sorokin's study says: "By exhibiting time and again the recurrence of type theories, he shows how necessary it is for the research student to take pains to inform himself about the works of other students before plunging into fact-gathering and then drawing inferences which he naïvely considers are original with himself." This observation, which applies to most of the citations made by the authors in this volume, should be pondered carefully and observed by the beginner in research.

[3] John M. Vincent, *Historical Research* (Henry Holt and Co., New York, 1911), p. 131.

The scholar must recognize the influences of heredity, environment, and education on himself.

Regardless of the degree to which one is imbued with the desire to be truthful and exact, the would-be scholar must take careful stock of himself; only by so doing can he make of himself the scholar he should be. He must recognize, first of all, the influences which heredity exercises over him. Careful thought on this factor must soon convince one of the limits and aptitudes which condition one's thinking. A recognition of one's proclivities will do much toward combating the undesirable ones.

In the next place he must recognize the tremendous effect of environment, tradition, and custom upon his manner of thinking.[5]

[4] It may be added also that there is never more than apparent conflict between intellectual honesty and loyalty to one's best self, to a cause, or to one's friends. Intellectual honesty comprehends these loyalties. Loyalty is a necessary part of integrity in character. Intellectual honesty always is in harmony with one's best self and if the "cause" conflicts with intellectual honesty then there is something wrong with the cause and the solution is simple.

[5] John Dewey, *Human Nature and Conduct* (Henry Holt and Co., New York, 1922), *passim;* William G. Sumner, *Folkways* (Ginn and Co., New York, 1906); Graham Wallas, *Our Social Heritage* (Yale University Press, New Haven, 1921); William F. Ogburn, *Social Change With Respect to Culture and Original Nature* (B. W. Huebsch, Inc., New York, 1922); William G. Sumner and Albert G. Keller, *The Science of Society* (Yale University Press, New Haven, 1927), 4 vols.; and L. L. Bernard, *An Introduction to Social Psychology* (Henry Holt and Co., New York, 1926).

With respect to the influences of climate, food, soil, and the general aspects of nature on man in general, see Henry Thomas Buckle, *History of Civilization in England* (Longmans, Green and Co., London and New York, 1901), Vol. I, Chap. II; Ellen C. Semple, *Influences of Geographical Environment on the Basis of Ratzel's System of Anthro-Geography* (Henry Holt and Co., New York, 1911); Ellsworth Huntington, *Civilization and Climate* (Yale University Press, New Haven, 1924), 3d ed.; Frederick J. Teggart, *Theory of History* (Yale University Press, New Haven, 1925), Chap. XIV, and for different views as represented by Hume, Turgot, Waitz, and Bagehot, Chap. XV; E. R. A. Seligman, *The Economic Interpretation of History* (Columbia University Press, New York, 1922), *passim;* Pitirim Sorokin, *op. cit.,* Chap. III, "Geographical

He must examine the bias which naturally results, look into the facts of his natural sympathies, and must endeavor to see himself in his proper setting. It requires a strong mind and character to rise above or set one's self apart from one's environment, friends, interests, prevailing authorities, and traditions, and to examine questions affecting them in a dispassionate and impartial manner. Yet a scholarly attitude demands and presupposes just these things. Although the recognition and study of one's propensities resulting from environmental influences will do much to protect one against them, the scholar must be on his guard constantly against the effects of his environment. The person well trained in history is better qualified to see himself and the institutions of his time in proper perspective than is the investigator with a poor training in history.[6] He should have a keen appreciation of the relativity of institutions and customs, of prevailing authority and sentiments, of moral standards and conventions, of literary standards and concepts, and seek to understand the effects of those of his own time upon himself. He should make certain also in studying the writers of other works that he is studying them in the light of their times. Falsifying, for example, has been looked upon differently at different periods in the world's history, and differently by different countries and groups within the same country at the same time. The same applies to other standards and conventions also.

The serious student must recognize, in the third place, the effects of his education upon his methods of thinking. He must be awake fully to the limits of his training and guard against all known weaknesses. He must work carefully with the mental tools in his possession and gather new ones as rapidly as possible. His mental equipment may be limited, but if used carefully

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School." Professor Sorokin makes the suggestive comment (p. 99): "In attempting to write the history of the geographical school, one's difficulty consists not so much in indicating the thinkers who have pointed out the influence of the geographical environment as it does in indicating those who have not mentioned it." For the influences of religion, literature, and government, see Buckle, *op. cit.*, Chap. V, and R. G. Gordon, *Personality* (Harcourt, Brace and Co., New York, 1926), Chap. VIII. An abridgment of this chapter is to be found in W. Brook Graves (Ed.), *Readings in Public Opinion* (D. Appleton and Co., New York, 1928), pp. 139-142. *Cf.* also Westaway, *op. cit.*, pp. 42-45.

[6] For a discussion of "The Writer and His Times," see Vincent, *op. cit.*, Chap. XII.

may yield results of greater value than those produced by persons who use greater minds with less care. The wise and honest scholar, however, will not attempt to engage in a research project which reaches beyond the bounds of his knowledge, if by doing so he may secure uncertain results which may endanger the interests of those depending upon him as an expert.

The scholarly attitude, of course, presupposes that all ulterior motives are entirely absent from the investigation. Any investigator who carries with him into his investigation such motives is not a scholar. He is not searching for truth and probably will be exposed in the end. Such persons often receive and certainly deserve no sympathy when exposed.

The scholar must attempt to secure objectivity

One of the prime requisites of sound scholarship is objectivity; at the same time it is one of the most difficult characteristics to secure. Many obstacles present themselves and render the attainment of genuine objectivity rare indeed. It may be profitable at this point to examine briefly some of these obstacles as a warning to the scholar in his efforts to work toward the ideal. A more detailed study of the various types of bias which afflict human beings is reserved for a later chapter primarily devoted to a study of the weaknesses of research workers and writers. Some of the common biases of which the scholar should rid himself have been alluded to above; they are hereditary, environmental, educational, religious, class, political, and patriotic. Other subtle subjective difficulties render objectivity difficult, and whether the discussion of human weaknesses and characteristics is directed toward the scholar himself or toward writers in general, he is expected to take the lesson home to himself. It is impossible for the critical scholar to know too much psychology; it will be invaluable to him in his effort to comprehend human nature.

The scholar uses his own nature as a key in studying others

Herbert Spencer has pointed out that in the interpretation of human conduct as observed in society the scholar is compelled to use his own nature as a key.[7] He is compelled to ascribe to others thoughts and feelings like his own which from the scientific point of view is frequently misleading. His intellectual faculty is seldom complex enough to grasp the social phenomena which are so extremely involved. He may not have gained through culture the plasticity of mind necessary to an understanding of the immensely varied actualities which societies display in different times and places, and those multitudinous possibilities to be inferred from them. He must understand and learn to control his emotions which present great obstacles in the attainment of truth—his fears, hopes, impatience, loyalty, sympathies, and antipathies. He must face, understand, and properly appraise his own biases, such as religious enmity or amity, egoism and altruism, patriotism and the lack of it, bias of class, bias of party, bias in point of view of social affairs whether political or otherwise, bias of religion or lack of religion.

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[7] Herbert Spencer, *The Study of Sociology,* The International Scientific Series (Kegan Paul, Trench and Co., London, 1887), Vol. V, pp. 388-389. Spencer's treatment of human conduct and of the different types of biases is a

Dr. George Dorsey put it well when he said: "In estimating both our own and others' personality, we have to reckon with emotions, instincts, memory, habits, sensations, age, experience, etc. These are variable factors. I am older today than I was yesterday; so much may have happened to me that I may not be the same person. Parents often suddenly realize that they do not know their own children." [8] Further he says: "You and I do not, cannot, see the same things. We do not see from the same point in space or time. Our eyes are not the same. We see only what we think we see. Your experience is your experience; mine is mine." [9]

In interpreting other persons in terms of our own thoughts and feelings we cannot expect to be more than partially correct in our attempts to interpret those patterned closely after ourselves. How much more difficult it becomes to interpret correctly persons of another race or persons living in times differing widely from our own. We may best recognize our inability in this respect by observing the converse inability of other races and

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classic, hence the frequent references to his work. *Cf.* also Irwin Edman, *Human Traits and Their Social Significance* (Houghton Mifflin Co., Boston, 1920), *passim;* and John Dewey, *op. cit., passim.*

[8] George A. Dorsey, *Why We Behave Like Human Beings* (Harper and Brothers Publishers, New York, 1925), p. 453.

[9] *Ibid.,* p. 454.

other individuals to understand our characters. The laws of intellectual action, Spencer insists, are the same for the civilized and uncivilized, the difference between the civilized and the uncivilized being in the complexity of faculty and in the amount of knowledge accumulated and generalized.[10] A fact in social evolution can be understood only as we understand it to result from the joint actions of individuals having certain natures, and these natures, even by great care, can be understood but imperfectly. Consequently we are being misled perpetually, due to our limited and defective intelligence. Our intelligences are limited in the fact that they have not developed sufficient complexity; they are defective in the fact, among other things, that they are lacking in plasticity of conceptive faculty, this defect being due to the fact that the ideas of most men have grown out of experiences gathered within comparatively narrow fields. The big problem is to cultivate this plasticity of mind so that we can accept as natural the countless combinations of social phenomena unlike our own, otherwise we cannot hope to understand coexisting social states, past social states, or alien social states in varying degrees of development.

Facts recently discovered usually magnified

Facts recently discovered usually seem important and are likely to be viewed with an improper perspective. When one becomes conscious of certain facts either through changed occurrences or a changed state of mind there often results the belief that such occurrences are more common than they were. For this reason it is difficult, frequently, to determine whether facts have changed or whether the state of mind of the observer has undergone a change. This renders difficult the attainment of a true perspective. The observer's belief that the world is growing worse, that this generation is worse than the preceding one, probably rests upon the fact that his vision now comprehends social phenomena which he did not recognize in preceding years, but which, nevertheless, existed. Things suddenly recognized are mistaken for things that suddenly have come into existence. Most testimony on which we have to form ideas of sociological states, past and present, must be discounted to meet this cause of error.[11] Research would dissipate many ideas and impressions which seem novel. A training in history and historical method is a most valuable safeguard against such perversion. Those who profess to despise the usefulness of such training are entirely ignorant of the limitations of their own mental processes and capacity. Two distinguished men in technical fields recently proposed a monetary scheme which they thought new and revolutionary. A study of monetary history would have revealed many experiments along the lines proposed, all of which have ended in failure. Because of the eminence of these men in their own fields they secured an attention altogether unjustified if the merits of their plans were considered in the light of the history of such proposals. It was difficult for them to understand why those well acquainted with the development of monetary systems should dispose of their proposals as worthless in such a summary manner. Henry George, in the development of his single tax doctrines, thought he had made a great discovery only to learn that the ideas had been developed a century before by the Physiocratic thinkers.

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[10] *Op. cit.*, p. 116.

Preconceived conclusions; cherished hypotheses

It is easy to find ample evidence of this kind of subjective influence among propagandists, fanatical agitators, and those who are busily engaged in serving some particular cause. It is probably true that most investigators cherish hypotheses which they are reluctant to discard when confronted with contrary facts. Such investigators tend to pick and choose their facts, to minimize some, to emphasize others. But these handicaps are not confined to the obvious propagandist; they are found among those who advertise themselves as scientific men. Quite often they are cleverly hidden and the methods of disguise are subtle, but they can be detected in time by the true scholar. At this point, however, the warning is aimed at the reader. No one should be more concerned than himself in watching for these things which silently creep upon him and destroy his capacity for objectivity unless carefully watched. It is difficult enough to free one's self of cherished hypotheses when one has every intention of doing so; but when the so-called research worker merely attempts to disguise them in order to retain them, his value as a scientific worker is destroyed. Spencer has put it as follows: "Statements proceeding from witnesses whose judgments are thus warped—statements republished by careless sub-editors, and readily accepted by the uncritical who believe all they see in print, diffuse erroneous prepossessions; which, again, tend to justify themselves by drawing attention to confirmatory facts and away from facts that are adverse. Throughout all past time vitiations of evidence by influences of this nature have been going on in degrees varying with each people and each age; and hence arises an additional obstacle to the obtainment of fit data." [12]

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[11] See Spencer, *op. cit.*, pp. 75-79, for an excellent discussion of this subject.

Emotional difficulties [13]

Emotions of every kind and degree disturb the intellectual balance and should be taken into account. Excited feelings cause us to estimate probability and importance incorrectly. The maternal instinct, love, hope, horror, disappointment, political passion, religious enthusiasm, class hatred, likes and dislikes, impatience, are feelings which lead to perverted views and upset our mental balance so that correct estimates of things are not secured. Each person gradually develops a mass of convictions moulded into agreement with his sympathies and antipathies and as questions come before him for his consideration he tends to form his opinions in harmony with these without inquiring whether direct evidence really justifies them. Symbols of power and authority—pageantry, uniforms, coats of arms, seals—awe and impress and render an impartial judgment difficult. Those who have had first-hand experience in a war can recognize, if candid, the tremendous importance of emotion in securing enlistments, in the subscription to funds, and in the rendering of services. War is probably the most extreme illustration of the deadly power of an insane emotionalism in peoples.[14] If we may be permitted something of a digression, one can but wonder whether war would not be destroyed if a conscious effort were made to curb the use of those trappings of war—martial music, banners, parades, uniforms, salutes, and the propaganda of the press—which create the irrational emotionalism that causes wars and fosters armament.

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[12] Spencer, *op. cit.*, p. 81.

[13] See Dorsey, *op. cit.*, Chaps. VI, VII, and also his more recent book, *Hows and Whys of Human Behavior* (Harper and Brothers Publishers, New York, 1929), *passim*, but especially Chap. VI, "Why Should You Control Your Emotions?" *Cf.* also Edman, *op. cit.*, Chap. II.

[14] For an interesting discussion of this subject, see W. Brooke Graves (Ed.), *Readings in Public Opinion* (D. Appleton and Co., New York, 1928), Chap. XXXIII, "Public Opinion in War Time," and Harold D. Laswell, *Propaganda Technique in the World War* (Alfred A. Knopf, New York, 1927);

Irrational emotion whether in war or in individual affairs renders sane decisions improbable if not impossible. It is the antithesis of poise, and poise is a valuable characteristic which every scholar should cultivate. Mr. Eigelberner put it well when he said that "poise is the outward expression of an inward condition of balance between the mental, moral, and physical qualities. It displays itself through the ability to see things in their true proportions, combined with confidence in one's ability to accomplish what is desired." [15] Poise implies tact and diplomacy in dealing with human beings, it implies a sane balancing between unattainable ideals and the necessities of the moment, a confidence in one's abilities to meet the necessities of the moment, a sense of humor when problems and persons become difficult, a fine consideration for others, a broad perspective, a general conservatism regarding the new, and a suppression of native desires which contravene the better judgments.

Personal and pecuniary interests impair objectivity

It is a fact not to be forgotten that many of the statements coming to our attention are over-shadowed by the distorting in-

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Arthur Ponsonby, *Falsehood in Wartime* (E. P. Dutton and Co., New York, 1929). The irrationality of war is treated thoroughly and admirably by Bertrand Russell in *Why Men Fight* (The Century Co., New York, 1920); by E. Haldeman-Julius, *The Outline of Bunk* (The Stratford Co., Boston, 1929), Chap. IV with the caption, "War's Insanity Is the Most Tragic Lesson of Ages of Bloody Rule by Bunk and Brutal Force"; and by Emil Ludwig, "War and Peace," in Charles A. Beard (Ed.), *Whither Mankind* (Longmans, Green and Co., New York, 1928), Chap. VII. Ludwig states the truth in that cryptic remark taken from Seneca: "We punish an individual guilty of assault or murder, but the massacre of a people is considered a glorious deed." Ludwig gives an excellent account of the pseudo-rationalizations which have been and are used in an attempt to justify war. The reader also would find it enlightening to consult Floyd N. House, *The Range of Social Theory* (Henry Holt and Co., New York, 1929), Chap. XXVII, "The Social Struggle," and Chap. XXVIII, "Economic Interpretations of War." Both of these chapters furnish many suggestive references to the leading writers on the subject.

[15] Eigelberner, *op. cit.*, p. 33.

fluence of some sort of self-seeking, pecuniary or otherwise. The literature circulated by business houses in the interests of their affairs, all advertising schemes, most organization and institutional movements, and all political agitations, are likely to be highly distorted by such interests. These observations are too well recognized to require illustration. It is quite common to witness cases in which those who, having been active in devising schemes for alleged beneficial public ends, and in which they profess to have no personal interests, consider themselves aggrieved when not appointed salaried officials in the end. Others keep organizations alive for the purpose of securing salaries long after they have served their purpose. In the words of Spencer, ". . . where personal interests come into play, there must be, even in men intending to be truthful, a great readiness to see the facts which it is convenient to see, and such reluctance to see opposite facts as will prevent much activity in seeking for them. . . . And since much of the evidence respecting both past and present social phenomena comes to us through agencies calculated thus to prevent it, there is here a further impediment to clear vision of facts." [16] Relatively few persons are willing to give testimony that will endanger a system on which they depend for their livelihood, or testimony that may offend their superiors and endanger their promotion. Social climbers are careful not to offend the tastes of the socially important whose favor they seek. There are those who are sensitive to any kind of criticism who, in order to escape hostile criticism of the great majority, bring forward testimony that pleases.

Research worker must be aware of optical illusions and peculiarities of hearing

Experimental psychology has made clear the possibilities of optical illusions as well as some of the peculiarities of our hearing and of acoustics. One frequently sees or hears what he wishes or expects to see or hear, and the untrained in objective methods is easily a prey to these illusions. The experienced research worker will bear these possibilities in mind and attempt to guard against them. The relations of observers to the facts are such as make visible the special, exceptional, and sensational, and leave invisible the commonplace and uninteresting, which form the great body of the facts.

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[16] *Op. cit.*, pp. 83-84.

Observation frequently confounded with inference

Lack of objectivity sometimes manifests itself in the allegation of something as actually perceived which is only a conclusion drawn from some perception. It may be due to lack of care in the drawing of conclusions, to mere superficiality, or to the desire to see certain conclusions because of some special interest in the results. For example, a high correlation between two sets of social data may be perceived but this is quite different from inferring correctly a causal relation between the two; and any inference as to causal relation is not to be confused on the one hand with the mere observation of a high correlation or on the other with an inference properly drawn after a thorough and objective investigation. For example, it has been pointed out frequently with respect to the common statement that marriage is conducive to longevity that the figures cannot afford a proof that marriage is a cause of long life. Upon careful examination it may be shown that marriage and longevity are concomitant results of the same cause or causes, as for example, perhaps the qualities which give man an advantage in gaining the means of marrying are the qualities which are likely to contribute to his longevity.

Errors in drawing important conclusions from insignificant tests

A lack of appreciation as to what constitutes the prerequisites for scientific conclusions, due to various kinds of prejudice if not to superficiality, is revealed frequently when important conclusions are drawn from insignificant facts and tests. One of the most common earmarks of the unscholarly is the habit of generalization on the basis of an insufficient number of cases. Many persons will generalize from one experience or case, even from one case based upon hearsay. In no conceivable way could such practice be considered scholarly. Even in university circles where one expects to find scholarly methods applied, there are some who insist that the proper method of teaching economics is by the so-called case method and then proceed to construct generalizations from a very few if not from individual cases. Scientific principles cannot be derived from a few cases; they cannot be derived from a great number of cases if the competent scientists dealing with those cases cannot arrive at the same conclusions after a study of them. The case system in law, in which precedent and principles of law based upon precedent are the determining factors, is not applicable to the social sciences in which scientific principles, not precedent or the principles involved in precedents, are being sought. If a sufficient number of cases are used in the social sciences as a basis for generalization the method is scientifically sound, but the so-called case system as it is applied today in our typical "case books" in the social sciences is inadequate, unscientific, and an excellent example of how some will generalize, or insist that they can generalize, from insufficient data. The advocates of our modern case books in economics, for example, cannot or will not see that the general principles of economics, resulting from thousands of observations and years of testing by thousands of persons vitally interested in observing their true working throughout their lives, are far more reliable and scientific than a few samples gathered here and there as a basis for generalization. Such cases can be of value only as illustrations of principles already determined and even in this limited use they are not particularly valuable from a scientific point of view.

Unless we are on our guard it is comparatively easy to be led away from the deep-seated and really important facts by superficial and trivial ones. Spencer illustrated this contention with a case that has a peculiarly modern application. He referred to a case in which certain Hindu students were given a college matriculation examination dealing with "technical terms, cant-phrases, slang, and even extinct slang, talked by the people of another nation" on the apparent assumption that this really tested their fitness to enter the University. Because the candidates for admission betrayed great ignorance concerning the questions involved, the examiner concluded they were not qualified to commence their higher education. When one considers some of our modern tests with similar purpose and notes the conclusions frequently drawn, one may conclude as did Spencer that "instead of the unfitness of the boys, which is pointed out to us, we may see rather the unfitness of those concerned in educating them." [17]

Inadequate conceptions due to wide distribution of data in space and time

Much of the data which we are led to consider, such as the commercial, financial, political, military, moral, religious, and class, are presented to us in such a diffused and multitudinous manner and under such various relations to us that our very best conceptions are extremely inadequate. Yet it is on just such data that we are given so many conflicting opinions. A consideration of how impossible it is to conceive accurately so relatively simple a thing as the territory which a society covers even with the aid of maps, descriptions, and many other aids, should convince one of the greater difficulty of framing adequate thoughts of a diffused moral feeling, of an intellectual state, of a social development, of a commercial activity pervading a territory, unaided by maps, and aided only by careless statements of careless observers. In a case from which many of our modern travel-writers could profit, Spencer says: "There is a story, apt if not true, of a Frenchman who, having been three weeks here, proposed to write a book on England; who, after three months, found that he was not quite ready; and who, after three years, concluded he knew nothing about it." [18] One cannot help but observe with amusement the discourses of the modern popular writers who visit this or that country for a month or so and then proceed to write "authoritative" articles on the true political, economic, and social conditions which they insist are found there. Such writers frequently are neither scholarly nor scientific in their method; often they are blinded by an inordinate egotism fanned by an insatiable desire for popular recognition.

The things we see near us, or which happen to come under our eyes, frequently impress us and distort our view; they tend to assume an importance not justified. If our observations are extended we may find that elsewhere certain movements are taking place in an opposite direction which are of more importance than those previously observed near at hand. An extended observation frequently reverses our original conclusions.

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[17] *Ibid.*, pp. 96-97. Excellent illustrations of peculiar and irrational methods used in measuring intelligence are given by Dorsey, in *Why We Behave Like Human Beings,* pp. 458-461.

[18] *Op. cit.*, p. 100.

No less difficult, probably more difficult, than to extend our knowledge over the proper amount of space, is to see facts in their proper time perspective.[19] Causes and results in social phenomena work themselves out over long periods of time and political actions which produce certain immediate results may produce unforeseen and radically different ones over a long period of time. The accomplishments of far-seeing statesmen, for example, cannot be judged finally by the results produced during their generation. "In a society living, growing, changing, every new factor becomes a permanent force; modifying more or less the direction of movement determined by the aggregate of forces. Never simple and direct, but, by the cooperation of so many causes, made irregular, involved, . . . the course of social change cannot be judged of in its general direction by inspecting any small portion of it. Each action will inevitably be followed, after a while, by some direct or indirect reaction, and this again by a re-reaction; and until the successive effects have shown themselves, no one can say how the total motion will be modified. You must compare positions at great distances from one another in time, before you can tell rightly whither things are tending."[20]

After various interesting illustrations of his points Spencer says finally: "The reader will now understand more clearly the meaning of the assertion that true conceptions of sociological changes are to be reached only by contemplating their slow genesis through centuries, and that basing inferences on results shown in short periods, is as illusory as would be judging of the earth's curvature by observing whether we are walking up or down hill . . .".[21]

This list of subjective difficulties should convince the reader that the attainment of a truly objective and scholarly attitude is difficult indeed. Eternal care and watchfulness on the part of one's self is the price. But objectivity in itself is insufficient to secure the best type of work. Certain other aptitudes are required and these will be mentioned briefly.

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[19] See A. S. Eddington, *The Nature of the Physical World* (The Macmillan Co., New York, 1928), Chap. VIII, "Man's Place in the Universe," and especially that part of the chapter devoted to "The Scale of Time."

[20] Spencer, *op. cit.*, p. 105.

[21] *Ibid.*, p. 111.

The scholar should like his work

Conceivably, a scholar, through sheer force of a strong will, may do successful work in a field in which he has little interest, but it hardly needs to be said that he will not persevere or continue long to do his best work under such conditions. Such work becomes drudgery of the worst sort and the investigation will not be pushed to such fine points as would be the case did the investigator take a keen interest in and feel some degree of pride in his work.

The research worker must possess great patience

Above all, great patience is required. Many persons are so constituted, so impatient for final results, that they cannot compel themselves to follow painstakingly all small questionable points to their logical conclusion regardless of the amount of time, effort, and patience required. Many people are prone to rush into print. They are anxious to dazzle, impress, and astonish. They are so anxious to place their wares before the public that they cannot wait to do a thorough or scholarly piece of work before it is rushed madly to the printer while they bethink themselves of some new subjects to inflict upon the public. Publishing houses are finding themselves submerged in a sea of manuscripts of this nature. Rare, indeed, are the modern works which appear as the result of years of careful study, research, and thought. The high rate of speed with which almost every aspect of our modern life moves militates against careful, scholarly work. Business concerns demand speedy results from their research men. College and university curricula have become so complicated and so susceptible to rapid changes that both the student and teacher find it difficult indeed to meet the daily requirements of those curricula and at the same time do careful, scholarly research of a prolonged nature. Nevertheless, in research, patience is not only a cardinal virtue but an absolute necessity. The person who expects to engage in scholarly research must take stock of himself to make certain he has the necessary patience and the ability to withstand the increasing pressure of other interests. He must make up his mind to work for distant and uncertain results. He must be cool, patient, reserved, and circumspect.

There seems to be a philosophy abroad today that persons in the so-called scholarly world must write something. One hears on every side: "If you wish to secure advancement you must write something; you must see that your name is before the public; it is not so much what you write as it is the fact that you write." This philosophy seems to imply a confusion between the values of notoriety and genuine fame. It is a partial explanation of the rapidity with which embryonic writers rush into print. Other explanations, equally deplorable, may be offered to fit many cases. Some writers see an opportunity to reap an income in royalties by the publication of a book at the psychological moment. The nature of the subject or the degree of careful investigation involved is not permitted to interfere with the appearance of the book at the moment assumed to be the psychological one. It is quite common to see college and university professors rush books to print in order to have them used in certain classes, regardless of the fact that better books may be available already. Graduate students hurry material to press at a fixed time in order to secure a university or college degree. Still others contrive to appear frequently in print as a part of a well-organized scheme for self-advertising. It is small wonder that much of this type of material, which publishing houses attempt to thrust upon the public, cannot be made to move from their bookshelves after the first rush of advertising is over. The intelligent public is so gorged with quantity rather than quality production that almost every conceivable scheme known in advertising has been well-nigh exhausted to awaken the public's taste for the wares. Such work has no lasting value and the scholarly instincts of the writers cannot be said to be very highly developed.

It may occur to the reader that the principles of sound scholarship advocated thus far are applicable only when one may ignore the time element in research, and that under modern everyday conditions, particularly in business research bureaus where time limits frequently are placed upon the research worker, they are too idealistic to be practical. The principles of sound scholarship are applicable at all times and places. Neither is the true scholar excluded from doing the so-called practical research for business research organizations where time is an important factor. He will apply his principles there as elsewhere, but he will differ from the unscholarly man in his powers of discrimination. If he must solve certain problems within a given length of time he probably will excel in his method of handling the available data within the given time limits, but he will appreciate fully the nature of his results. If the problem is too large to be solved within the available time he will not present his results as established facts but as tentative presumptions. He will understand the weaknesses and limits of his report and so notify those to whom he reports. His scholarship shows itself, not in pedantry and inability to produce results, but in an ability to make the best use of his time and in his clear recognition of the value of the work produced. Truly scholarly principles are workable in the everyday business world even though they may show themselves most conspicuously when time is not a factor.

The scholar must have the quality of accuracy

Even though the scholar may like the tasks before him and is not impatient regarding results, he must have the additional quality of accuracy. Some persons have a genius for inaccuracy. They cannot attain even a respectable degree of accuracy; they are constitutionally and chronically inaccurate. In describing this "disease" we are not concerned with persons whose mistakes are from carelessness or inadvertence, but with persons who make many and continual mistakes despite the most persevering efforts to be exact. Some persons, perhaps many, distort practically everything by inexactitude; they are like children in this respect; their imagination magnifies realities and confuses them with the products of pure invention. They never learn the first principles of accuracy.

Froude, an English historian, apparently affords a celebrated case in point; hence the term "Froude's Disease" which is applied to the chronically inaccurate. Langlois and Seignobos say regarding Froude: "Froude was a gifted writer, but destined never to advance any statement that was not disfigured by error; it has been said of him that he was constitutionally inaccurate. For example, he had visited the city of Adelaide in Australia: 'We saw,' says he, 'below us, in a basin with a river winding through it, a city of 150,000 inhabitants, none of whom has ever known or will ever know one moment's anxiety as to the recurring regularity of his three meals a day.' Thus Froude, now for the facts: Adelaide is built on an eminence; no river runs through it; when Froude visited it the population did not exceed 75,000, and it was suffering from a famine at the time. . . . Froude was perfectly aware of the utility of criticism, and he was even one of the first in England to base the study of history on that of original documents, as well unpublished as published; but his mental conformation rendered him altogether unfit for the emendation of texts; indeed, he murdered them, unintentionally, whenever he touched them."[22] Needless to say, persons with Froude's disease are not qualified to engage in a critical investigation.

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[22] Langlois and Seignobos, *Introduction to the Study of History* (Henry Holt and Co., New York, 1912), p. 125. An interesting fact concerning Froude is that he did considerable writing on methodology. The frequency with which methodologists fall short of the standards set for themselves is impressive and disquieting, to put it mildly. It illustrates at least what Shakespeare through Portia once said: "If to do were as easy as to know what were good to do, chapels had been churches and poor men's cottages princes' palaces. It is a good divine that follows his own instructions: I can easier teach twenty what were good to be done, than be one of the twenty to follow mine own teaching." *The Merchant of Venice,* Act I, Scene 2. In W. Stanley Jevons' *The Principles of Science* (Macmillan Co., Ltd., London, 1913) is a chapter (XXXI) called the "Reflections on the Results and Limits of Scientific Method," and in commenting upon it Karl Pearson in his *The Grammar of Science* (Adam and Charles Black, London, 1911), p. 128, note 1, calls it a remarkably unscientific chapter. Langlois and Seignobos, in the first line of the quotation given above use the word "never" which in all probability makes their own statement untrue. Henry T. Buckle in his *History of Civilization in England* (Longmans, Green and Co., London and New York, 1901), Vol. I, says many good and sound things on methodology and at the same time repeatedly mars the work by extreme, unsound, and unscholarly statements. Henry Morse Stephens once said of Buckle's *History of Civilization in England*: "In spite of a certain parade of erudition and impartiality, the most careless reader cannot fail to perceive that the author is bolstering up a theory and endeavoring to prove that a certain philosophical scheme is justified by the facts of history." *Counsel Upon the Reading of Books, With an Introduction by Henry Van Dyke* (Houghton Mifflin Co., New York, 1920), p. 80. Examples might be multiplied.

The authors of this volume are thoroughly aware that they may find themselves placed in the same class and have approached the task with the sole aim of rendering what service they may and not with any pretensions as to their own infallibility. They at least recognize how difficult it is to follow the principles prescribed in this book.

The scholar must be prudent, judicious, and sensible

The scholarly investigator also must be prudent, judicious, sensible; he must have highly developed powers of will and attention; he must have a speculative turn of mind, one able to detect cause and effect in the sense of sequences, the relations between things. These are aptitudes required, and if the would-be scholar is not certain that he possesses them he should turn his attention to other lines of endeavor; otherwise the misguided efforts expended in research are all out of proportion to the value of the results secured.

While one purpose of a study of methodology is to develop a wholesome skepticism and to destroy credulity, it should not cause the would-be scholar to swing to the extreme and develop a hostile skepticism and cynicism that make him obnoxious even to his friends. Occasionally this type of so-called scholar is met with; such persons are unhappy with their skepticism and they make their friends unhappy. Sometimes those who meet for the first time the principles of critical scholarship become so obsessed with the ideas that they swing to such an extreme position. In time they doubtless will swing back to a happy balance.

The research worker of today must learn how to cooperate and at the same time secure the cooperation of others, all of which is the very essence of the capacity to understand people and to inspire confidence. It naturally follows that the highly trained person with experience has an excellent opportunity to inspire confidence provided he has no other repelling characteristics. There are research men, however, who are not only poor cooperators but occasionally are a general nuisance. They sometimes make little effort to present themselves or their ideas to advantage; they may be poor mixers, or snobbish, or create an atmosphere of animosity; they may be contentious and combative, intolerant, and obnoxious. Such persons are a dead weight to any organization and may represent a pathological problem. No normal person wishes to belong to this class. The desirable characteristics are just the reverse of these. Everyone delights in the cheerful, friendly, wholesome, good mixer, who cooperates in every way possible, who is patient, and considerate, who plays the game of life according to the best rules, who can be trusted, and who is not snobbish or patronizing or imbued with his own importance.

In daily contacts with fellow human beings a fine tolerance is much to be preferred to the parading of erudition, criticism, and skepticism. These should be reserved for the private study. It is well to remember that probably no one loves a critic. As a result it behooves him to temper his criticisms in every way possible in order to protect the feelings of those being criticized. The critic should not forget those considerations which make him a gentleman; at the best his task is a difficult one. In a similar way, posing and a parading of erudition are odious wherever found. The desirable characteristics do not destroy a wholesome skepticism or conflict with a welcome sobriety which every scholar must possess.

In addition to all these requirements we would add those set forth by Professor Levy-Bruhl who, in portraying his idea of the education of an ideal man of science, said: "I conceive him to be a man of his own time and rather a harbinger of the coming age than a representative of the bygone ones. He is also to be thoroughly human, and therefore never exclusively engrossed by his own special work, though he gives it his days and sometimes his nights. I see him eager for every noble cause, responsive to the great calls of his age, and endowed with a beautifully furnished mind. He is no stranger to the invaluable treasures which the ancients bequeathed to us. Their poetry, their philosophy appeal to him. He finds therein a matchless refreshment, which makes him the more keen-witted, the more clear-sighted for his own investigations."[23]

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[23] L. Levy-Bruhl, "Research as It is Today," *Science* (Nov. 19, 1926), Vol. LXIV, No. 1664, p. 486.

CHAPTER III

REWARDS AND PUNISHMENTS IN RESEARCH

Rewards lie in accomplishment

The scientific man receives his rewards in accomplishing in his field the things that scientific method will permit him to accomplish with his particular science. The tangible evidence of reward aside from the satisfaction coming from a contribution to science may assume a variety of forms. It may be in the form of great wealth or poverty, renown or obscurity, applause or disapproval, promotion or demotion, or indeed loss of life.[1] Certainly the true scientist cannot look with any high degree of assurance to any particular type of reward apart from the satisfaction which comes to him in the accomplishment of tasks well done. He is a scientist because scientific methods enable him to accomplish certain things and in these things lies his satisfaction. At once we raise the question as to what science and scientific method accomplish.

The accomplishments of science[2]

Since science is a matter of methodology we speak of the accomplishments of scientific method. Without being accused of bias a strong case may be made out for the accomplishments of scientific method. One only need give a little thought to the great benefits which the world has received by the advances made in the science of medicine, in the biological, physical, and chemical sciences, in the geological, mathematical, astronomical, and social sciences, to realize the truth of this. But aside from these very obvious advances, which in many respects today are astonishing, there are certain less conspicuous, and yet in a sense more fundamental, ones which deserve some attention. These have been set forth most admirably by Karl Pearson, and some of the present observations follow closely those outlined by him.[3]

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[1] Lavoisier, the father of chemistry, was beheaded by a republic "which had no need of chemists." Arthur D. Little, *The Handwriting on the Wall* (Little, Brown, and Co., Boston, 1928), p. 45. For similar instances see his p. 265. See also Joseph Mayer, *The Seven Seals of Science* (The Century Co., New York, 1927), pp. 171-176, for a fuller account of the work of Lavoisier. Roger Bacon spent many useful years of his life in prison as a price for attempting to advance science beyond the superstitions of his day. In modern times the toll of life taken in the laboratories of experimental science is a commentary upon the price which modern scientists pay to advance science.

[2] For an interesting and enlightening account of the accomplishments of science, particularly in manufacturing, see Little, *op. cit.*, Chap. II.

Scientific method promotes sound citizenship

Scientific method, since it trains the mind to an exact and impartial analysis of facts, provides a type of education specially fitted to promote sound citizenship. Every citizen is confronted with facts with which he must deal. If he is to advocate and assist in establishing a sound social program he must be able to interpret the facts in an intelligent manner. This calls for a trained and discriminating mind. Such a mind is less likely to be led, by appeal to the passions or emotions, to sanction acts which in the end may destroy social stability if they do not lead to social disaster. The scientific man demands a high standard of reasoning, a clear insight into facts and results, and this demand is certain to lead to increased social stability and benefits for society. Through proper and objective classification of facts, science leads to new truths which provide a sound basis for far-reaching social programs. In the words of Edman: "Science is the guarantee of progress. It has shown men that the future is to some extent in their own hands; that by dint of a laborious and detailed application of intelligence to the processes of nature, those processes can be controlled in the interests of human welfare." [4] Graham Wallas has presented a similar thesis in stating that the world-outlook of science has given mankind a growing sense of power both over their environment and over their own conduct.[5] It is not too much to say that the goal and purpose of science is to explore and classify social facts, constantly widening our interpretation of them until finally we have a complete interpretation of the universe. And there is no way to secure a knowledge of the universe except through the medium of scientific method. "The hard and stony path of classifying facts and reasoning upon them is the only way to ascertain truth. It is reason and not the imagination which must ultimately be appealed to." [6]

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[3] See Karl Pearson, *The Grammar of Science* (Adam and Charles Black, London, 1911), Chap. I, *passim.*

[4] Irwin Edman, *Human Traits and Their Social Significance* (Houghton Mifflin Co., New York, 1920), p. 408.

[5] Graham Wallas, *Our Social Heritage* (Yale University Press, New Haven, 1921), Chap. XI, "Science."

Discoveries of science directly influence individual and social conduct

"Social theories change and religious dogma bends under the shock of new discoveries." [7] A scientific discovery of a fact in heredity may change a whole people's attitude and social program regarding the proper treatment of defective and degenerate members. It may bring programs of segregation and sterilization and modify social ideas of right and wrong and of moral responsibility. Capital punishment may give way to surgical operations as soon as medical science reaches a certain stage. Organized charity may supersede individual charity and in turn be abolished in the interest of a more scientific social program. Mental attitudes regarding habits of certain peoples or individuals are changed as a result of better understanding of psychology. A better and more general understanding, also, of the functions of the various glands in the human body is doing much to change the standards by which the physical and mental characteristics of human beings are to be judged. It should be needless to point out that a diffusion of such understanding is certain to affect judgments regarding moral standards.[8] Ideas of dress, of diet, of travel, change radically as a result of scientific discoveries. Sumptuary legislation presumably is the outgrowth of discoveries made by scientists. In most problems of this kind individual passions and biases constitute extremely strong factors in our judgments even though the problems often are of a type affecting the whole future of our society, its efficiency and its stability. "Science has so drawn the world together and so rapidly re-moulded civilization that the social structure is now strained at many points. Statecraft and religion, law and custom, lack the plasticity of science and are now in imperfect contact with the contours of their new environment. The result, as events have shown, is friction and confusion."[9] Social welfare can be assured only through an understanding of the laws which underlie a proper social development. Moral standards resulting from mere philosophical theorizing can have no permanent basis. Standards of morality must rest finally back upon scientific laws and principles. Many moral standards dating from early philosophical systems or savage superstitions have given way before the onslaughts of scientific laws. No judgment is truly moral that does not depend finally and fundamentally upon accurate knowledge and scientific method. David Starr Jordan seems to have stated the issue clearly when he said: "Religious conscience tells us to do what is right but does not tell us what is right. Conscience alone without knowledge may not help us. The wickedest deeds in the world were often performed with clear conscience."[10] Shakespeare recognized this fundamental problem when he said, "There is nothing either good or bad, but thinking makes it so."[11] The practical and effective treatment of every social problem rests properly back upon scientific method just as does the determination of the proper standards for individual and social conduct.

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[6] Pearson, *op. cit.*, p. 17.

[7] Little, *op. cit.*, p. 49.

[8] See especially George A. Dorsey, *Why We Behave Like Human Beings* (Harper and Brothers Publishers, New York, 1925), Chap. IV on "The Endocrine Glands and the Causes of Death," and *Chemistry in Medicine*, edited by Julius Stieglitz and a board of advisory editors (The Chemical Foundation, Inc., New York, 1928), Chap. VI on the "Chemical Regulations of the Body."

The influence of scientific method on practical life is enormous

One needs but mention the list of modern inventions to drive home the significance of scientific progress in our daily life. The radio, the sound film, air transportation, the automobile, electrical equipment, farm machinery, and an endless number of time- and labor-saving devices have revolutionized our methods and standards of living within a generation. Indeed, marvelous inventions have increased so rapidly within recent years that people appear to be looking upon them as the customary and usual thing; and peculiar as it may seem, the most phenomenal advances seem to have come from the remote discoveries in the fields of pure science. Scientific discoveries in the fields of pure science as contrasted with the so-called applied sciences almost invariably yield more far-reaching and beneficial results than do the inventions and discoveries in the latter fields where more immediate results are of importance. "What at the instant of its discovery appears to be only a sequence of purely theoretical interest, becomes the basis of discoveries which in the end profoundly affect the conditions of human life. It is impossible to say of any result of pure science that it will not some day be the starting-point of wide-reaching technical applications."[12] The so-called practical world rapidly is learning this important lesson with the result that some of the largest industrial enterprises of the world are now employing the most outstanding scientists to engage in research in fundamentals with only distant and uncertain prospects in view. So-called works laboratories are separated from the pure research laboratories and the distinction, nature, and purpose of each clearly recognized. This recognition of the value of the unrestrained scientist in the pure research laboratory by enlightened industrial leaders has justified their confidence repeatedly and in a surprising manner.

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[9] Little, *op. cit.*, p. 267.

[10] Maynard Shipley, *The War on Modern Science* (Alfred A. Knopf, New York, 1927), appendix including Jordan's "Freedom of Knowledge," p. 395. *Cf.* also Edman, *op. cit.*, Chap. XV, "Morals and Moral Valuation," and Walter Lippmann, *A Preface to Morals* (The Macmillan Co., New York, 1929), *passim.*

[11] *Hamlet*, Act II, Scene 2. See John Dewey, *Human Nature and Conduct* (Henry Holt and Co., New York, 1922), *passim*, but especially pp. 295-302, for a philosophical discussion of moral standards with some comments upon Spencer's theories.

Scientific method enables the scholar to reduce to laws the relationships among phenomena

There appears to be in human nature an insatiable desire to reduce mass data and the relationships among apparently isolated phenomena to brief formulæ or laws. It is our method of relieving our minds of the burden of remembering the many individual sequences among related phenomena; it brings us the minimum of intellectual fatigue. The ultimate in scientific method is the discovery of principles. Sound methodology leads to a classification of facts or data, the observation of their relationships and sequences, and finally, through the use of our constructive imaginations, to the formulation of principles or laws. Only

[12] Pearson, *op. cit.*, p. 29.

in this manner may we arrive in time at a true understanding of the various phenomena with which we are surrounded. In the words of Pearson, "Science endeavors to provide a mental *résumé* of the universe, and its last great claim to our support is the capacity it has for satisfying our cravings for a brief description of the history of the world. Such a brief description, a formula resuming all things, science has not yet found and may probably never find, but of this we may feel sure, that its method, and that the truth it has reached is the only form of truth which can permanently satisfy the æsthetic judgment." [13] Further, in stating the aim of science, he says, it is ". . . to enable the exertion, best calculated to preserve the race and give pleasure to the individual, to follow on the sense-impression with the least expenditure of time and of intellectual energy. Science is in this respect an economy of thought—a delicate tuning in the interests of the individual of those organs which receive sense-impressions and those which expedite activity. The mind with scientific knowledge brings with the greatest rapidity and with the least intellectual strain fitting conceptions drawn from its store of sense-impressions to bear on its immediate sense-impressions, *i.e.,* on the phenomenal world." [14]

Scientific method enables individuals to extend the bounds of their knowledge beyond individual experiences

The experiences of all individuals during their lifetime are limited. Were they unable to profit by and learn from the experiences of others their knowledge would be decidedly limited. Individual experiences, no matter how valuable, can never be an adequate substitute for that body of knowledge composed of generalizations from a great number of individual experiences. Scientific principles are derived from a multitude of individual experiences of a great number of people. In explaining the nature of the science of economics, Henry Clay put it well when he said: ". . . the experience of any individual or class is too limited to give by itself anything but a limited and partial insight into the economic system as a whole.

"Moreover, the understanding of a system that a man gains from the experience of being a part of it is more of the nature of instinct than knowledge. It enables a man to judge and act; it does not enable him to explain always how he judges and why he acts. If forced to give an explanation, the explanation may be a wrong one; copy book maxims about industry and early rising have a suspiciously large place in the explanations given by self-made men of their success; luck and a lack of scruple, though at least as important, are never mentioned. Thus the experience of people actually engaged in industry has to be subjected to their own reflection and studied from outside, to be *analyzed,* before it can add anything to the body of knowledge which all may share who are willing to study; treated in that way it becomes the most valuable of all sources of knowledge."[15]

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[13] Pearson, *op. cit.,* pp. 36-37.

[14] *Ibid.,* pp. 66-67.

There are many persons who cannot grasp these elementary facts and who continue to insist that, in so far as real knowledge is concerned, there is a vital distinction between the value of the knowledge secured by the so-called practical experience and the body of theories resulting from an investigation of a great number of individual cases. Those who insist upon the common distinction between the theoretical and practical rarely understand the fallacy of their position. Extreme specialization is a characteristic of our modern life, and because of the rapid pace of our competition an individual does well frequently if he can master in his lifetime the intricacies of his own division in his business much less learn the business as a whole. If he learns the business as a whole he is compelled to withdraw from all or a part of his daily occupation and devote himself to the assimilation of all the experiences of the many persons who have devoted their lives to the specialized parts. His specialized field has now become that of generalization and explanation and the sum-total of his knowledge of the business will be much greater than it could have been were he compelled to devote all or most of his time to one division within it.

In a single division of a business a person may spend most of his life. If he finds time to reduce his experiences to some written form, others may profit in a short time by what he has learned in a lifetime. If many persons doing the same type of work have left adequate records behind, these may be summarized and generalized into a body of knowledge equal to that secured by the dozens of persons throughout a lifetime or the span of several lives. If the experiences of many persons in every division and department of a business are recorded in records and these are summarized and generalized, the resulting knowledge of that business is far more accurate and more valuable than that which any individual in the business may have if he at the same time has not availed himself of this general body of knowledge.

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[15] Henry Clay, *Economics for the General Reader*, American Edition by E. E. Agger (The Macmillan Co., New York, 1920), p. 7.

A careful scholar does this analyzing and generalizing from the experiences of others in the fields in which he is interested. It is his great service and it is only through this method that principles of action can be secured. It is in this type of information that leaders, administrators, directors of businesses, and educators, are primarily interested. It is by such a body of generalized experiences that individuals broaden their own knowledge. Those who insist, for example, that only a person engaged in a certain business, and this usually means a specialized part of it, are competent to understand or explain it do not understand what they are urging. Such persons are valuable as disseminators of information only when they generalize from many cases. An individual case does not serve as a basis for generalized principles. Ordinarily the so-called practical business man has had less opportunity to study others' experiences than has the scholar who is devoting all his time to just that thing and moreover knows how to do it. A trained scholar can learn as much about a business by gathering together hundreds of experiences in a few weeks, months, or years as can any individual within the business in a lifetime who does not resort to the same methods of securing generalized knowledge. Occasionally one sees the sad results following the attempt to secure for purposes of generalization the services of a specialized practical person who has had no experience in generalization.

For purposes of education a person can work from the body of generalized experiences back into individual cases, acquiring the individual experiences with little difficulty or delay—and it is his duty to add as much practical experience as possible in support of his generalizations—but to reverse the procedure and expect him to understand the whole by an individual experience is difficult indeed. Many who insist upon the "practical" being more valuable than the "theoretical" confuse the operating aspect of a business or part of a business with the management end where general policies become paramount. If an individual expects to direct policies he must find some way to acquaint himself with the generalized experiences of many individuals in all the departments of most of the concerns engaged in that type of business. This is why college and university trained persons who have studied these generalized experiences should have an advantage over the individual who has spent his years within a given division of a business in rising to the position of manager or director.

Every wise person profits by the experiences of others. The tuition in the school of individual experience is high, the returns limited, and the experiences painful. Only the hopelessly ignorant insist that real knowledge must be secured in this manner. The scholar renders an incalculable service to society by devoting himself to generalization while others are busily engaged in their specialized activities. Each type of specialist renders service to the other. The scholar is enabled to live on a relatively high level because of the other specialists; the other specialists are enabled to broaden their own experiences and to become more proficient with relatively little effort through the services of the scholar.

Dr. Arthur D. Little calls the research scholars the "Fifth Estate."[16] "This Fifth Estate," he says, "is composed of those having the simplicity to wonder, the ability to question, the power to generalize, the capacity to apply. It is, in short, the company of thinkers, workers, expounders, and practitioners upon which the world is absolutely dependent for the preservation and advancement of that organized knowledge which we call Science. . . . It is they who bring the power and the fruits of knowledge to the multitude who are content to go through life without thinking and without questioning, who accept fire and the hatching of an egg, the attraction of a feather by a bit of amber, and the stars in their courses as a fish accepts the ocean."

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[16] Little, *op. cit.*, Chap. XII, "The Fifth Estate," especially p. 253.

Dr. Little estimates that there are not in the entire world 100,000 persons whose creative effort is responsible for the advancement of science and that the general regard for them is none too high. "The absent-minded and myopic professor is a standardized property of the stage and screen. The expert, if not under a cloud, is at least standing in the shade." Part of this is due to "a preposterous and terrifying language" which scientists have created in the interests of exactness, part of it is due to lack of militancy among them, to their general philosophy of service and self-effacement, to their general lack of political power, and to the fact that they are rarely persons of great material wealth—a large proportion coming from the middle class." [17]

A participation in these accomplishments, then, is the true reward of the scientist, and a scholar looking forward to research should be aware of this. Just what other forms his reward may assume is problematical and often accidental. Some of his rewards and punishments may come through his appraisal by his contemporaries. These methods of appraisal sometimes are applied in a scientific manner; quite often they are not, and then it requires the lapse of time to secure the proper appraisal and to render justice where justice is due. To the common methods of appraisal and meting out of rewards and punishments we now turn our attention.

Criticism as a bar to charlatans and incapables

One function, perhaps an incidental one, of the scholarly critic, besides recognizing and applauding the scholarly work, is to expose to public gaze the fallacies, the errors, the inaccuracies, and the frauds which are presented to the public as knowledge by unscholarly writers or speakers. A great gain is secured by the public when the road to knowledge is cleared of this mass of rubbish through the aid of scholarly criticism. Few persons have the temerity to write or speak for public consumption on matters which fall within the fields of mathematics, medicine, chemistry, astronomy, or other technical sciences, without first having had a rather high degree of training in those fields; to do so exposes them at once to the shafts of the well-informed. In the fields of the social sciences, however, it is far more difficult to convince the untrained person that scientific training is a necessary prerequisite to a wise handling of problems in those fields. Scientific method, careful observation, accuracy, and correct reasoning are just as essential in the social sciences as in the exact sciences, if knowledge is to be advanced. But this fact is not appreciated by those whose training has been inadequate and whose critical faculties are undeveloped. It is a function of the scholarly critic to bring this fact home to the uninitiated by exposing his weaknesses to the public in terms that can be understood.

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[17] *Ibid.*, p. 253.

Much of our criticism comes from the incompetent

Unfortunately much of the criticism emanates from persons who are themselves uncritical and unqualified to give matured and competent opinions to the public. When the untrained "critic" attempts to enlighten the public as to what is and is not "proper information," the situation frequently becomes ludicrous. Cases have arisen in which incompetent public officials have undertaken to decide what is and is not good history. Quite recently a public official attempted to determine which histories were patriotic and which were not. One could hardly conceive of a more untrained, unscholarly, or unscientific mind and attitude than that manifested in this instance. It hardly needs to be said that the position of this official was ridiculous. Such persons do not have the slightest appreciation of the nature of history or the meaning of scientific training or scientific investigation. The harm that such ignorant public officials may inflict upon the public sometimes is almost incalculable. Buckle once said regarding such cases: "There is no instance on record of an ignorant man who, having good intentions, and supreme power to enforce them, has not done far more evil than good. And whenever the intentions have been very eager, and the power very extensive, the evil has been enormous." [18]

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[18] Henry T. Buckle, *History of Civilization in England* (Longmans, Green and Co., London and New York, 1901), Vol. I, p. 183. See also John W. Draper, *History of the Conflict Between Religion and Science*, International Scientific Series (D. Appleton and Co., New York, 1883), 8th ed., Vol. XII; Andrew Dickson White, *A History of the Warfare of Science with Theology in Christendom* (D. Appleton and Co., New York and London, 1896), 2 vols.; Maynard Shipley, *The War on Modern Science* (Alfred A. Knopf, New York, 1927); Harold U. Faulkner, "Perverted American History," *Harper's Magazine* (February, 1926), pp. 337-346; Bessie L. Pierce, *Public Opinion and the*

History is concerned with the accurate presentation of events and facts as they existed in the past; it is not concerned with the moral or ethical aspects of any individual's acts.[19] Those questions belong to the provinces of morals and ethics, which, in turn, are well-grounded only when they rest fundamentally upon bases scientifically tested. Nor is history concerned with the wisdom or lack of wisdom, the patriotism or lack of patriotism of the acts of any historical character further than to portray facts just as they were. The historian furnishes the student of ethics and politics with material for his use, but his judgment in ethical and political questions has nothing to do with what is or is not history. It is not ethics, or patriotism, or religion, or art, but the attainment of truth that is the true historian's single aim. This is true for the scholarly investigator in all social sciences, since, outside of direct observation in the exact sciences, he is engaged to a large extent in historical work and must be an historian. Scholars are rather well agreed that it is the sole function of the historian to present the truth about the past and leave it to others to draw the ethical, political, philosophical, or theological lessons as they see fit.

It is further to be doubted whether these unscholarly critics, who frequently are in a position to curb the true scholar in the interest of some pet theory, or moral, ethical, or political standard which they wish to enforce, have any appreciation of the relative unimportance of their pet standards as compared with scientific standards, if a long period of time be considered. Although writing with particular reference to the Dayton, Tennessee and Chicago episodes, Maynard Shipley says, however: "Let it not be complacently assumed that the uprising of the uninstructed

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Teaching of History (Alfred A. Knopf, New York, 1926); John P. Fort, "Behind the Scenes in Tennessee," *Forum* (Aug., 1925); Arthur G. Hays, *Let Freedom Ring* (Boni and Liveright, New York, 1928); Walter Lippmann, *American Inquisitors: A Commentary on Dayton and Chicago* (The Macmillan Co., New York, 1928); W. Brooke Graves (Ed.), *Readings in Public Opinion* (D. Appleton and Co., New York, 1928), *passim*, but especially Chaps. VII-VIII; Bertrand Russell, *Sceptical Essays* (W. W. Norton and Co., New York, 1928), Chap. IX on "The Harm that Good Men Do"; Edwin Linton, "The Scientific Method and Authority," *Science* (Feb. 12, 1926), Vol. LXIII, No. 1624.

[19] *Cf.* Arthur M. Schlesinger, "History" in Wilson Gee (Ed.), *Research in the Social Sciences* (The Macmillan Co., New York, 1929), Chap. VII.

masses, in large sections of this nation, constitutes only a war on evolution as such. It cannot be too strongly emphasized that we are in the midst of a war on the method of science as a whole, though more particularly on the method of science as applied in geology, biology, psychology, anthropology, sociology, and history." [20] Buckle insists, perhaps correctly, that what is called the moral instinct has influenced but little the progress of civilization and that nothing in the world has undergone so little change as those great dogmas of which moral systems are composed. The great advancement has been made in intellectual truths. "In reference to our moral conduct," he says, "there is not a single principle now known to the most cultivated Europeans, which was not likewise known to the ancients. In reference to the conduct of our intellect, the moderns have not only made the most important additions to every department of knowledge that the ancients ever attempted to study, but besides this, they have upset and revolutionized the old methods of inquiry. . . ." [21] He also insists that the intellectual principle is not only more progressive than the moral but also more important in results. "The consequence is," he says, "that although moral excellence is more amiable, and to most persons more attractive, than intellectual excellence, still, it must be confessed that, looking at ulterior results, it is far less active, less permanent, and . . . less productive of real good." [22] Elsewhere he says that the way in which great thinkers control the affairs of men, and by their discoveries regulate the march of nations "should be enough to repress the presumption of statesmen and legislators, who so exaggerate the importance of their craft as to ascribe great results to their own shifting and temporary contrivances." [23]

The critic and the book review

The principal medium through which the critic attempts to advise the public on what he considers to be the scholarly and the unscholarly is the book review. The National Association of Book Publishers recently listed 231 American newspapers which regularly give space to the reviewing of current books.[24] Theoretically reviews should give the public a short cut to what is good and to what is poor in publications; they should give the public the benefit of the judgment of scholars of unquestionable ability and standing; they should be a record of the mature judgment of persons qualified to speak with authority in the field of knowledge concerned.

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[20] *Op. cit.*, pp. xii-xiii. Substantially the same view is held by Walter Lippmann. See his *American Inquisitors* cited above.

[21] Buckle, *op. cit.*, Vol. I, pp. 180-181.

[22] *Ibid.*, p. 183.

[23] *Ibid.*, p. 216.

If this theory and ideal were realized in practice the tasks of the readers who attempt to keep abreast of what is worth while would be simplified to a great degree. It would be gratifying, indeed, if the busy scholar could rely without question upon the word of the reviewer as to what is good and what is poor. For the not-too-critical student the great majority of reviewers undoubtedly render a service. On the whole, they probably succeed in detecting and eliminating the obviously poor. They at least render some service in enabling a reader to keep abreast of new literature in the fields of his interest. But the critical scholar knows full well that, aside from the detection of the obviously poor, many reviewers cannot be relied upon to give able and scholarly judgments. The reasons for this sad state of affairs are little different from the reasons given for the production of any unscholarly piece of work. The unscholarly reviewer, however, is to be condemned in terms immeasurably more severe, if possible, than is the person who is so unfortunate as to place an unscholarly piece of work before the public. In a peculiar sense the reviewer is advertising himself to the public as one qualified to pass a proper judgment upon the work being reviewed. He often adopts the attitude that the world can accept his estimate of the work as authoritative, that he is an arbiter of importance in the matter, and that his judgment is to be respected. Because of his position he should be a scholar of the first rank; unfortunately he frequently is an inferior one. This compels a classification of reviews and reviewers.[25]

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[24] Wayne Gard, *Book Reviewing* (Alfred A. Knopf, New York, 1927), Preface, p. vi. For a history of criticism, see Professor Gard's Chap. I.

Professor Gard distinguishes between criticism and book reviewing somewhat as follows: Criticism in general may be concerned with an author's entire work or with a group of writers of a given period; it assumes that the reader is more or less familiar with the authors and books being discussed; and it generally deals with works which have been published for some time. The review, by way of contrast, usually is limited to one book; it assumes less information on the part of the reader; and it generally deals with a work or works just off the press. *Op. cit.*, pp. 13-14.

Descriptive and critical reviews

In general reviews may be divided into two classes, the descriptive and the critical. The latter class has been subdivided by Professor Gard into such types as the judicial, moral, and impressionistic. The judicial type attempts to appraise a work by its historical models which have been accepted as good; the moral type attempts to weigh the work according to its teaching, direct or implied; and impressionistic criticism, which Professor Gard thinks has supplanted the judicial and moral, appraises a work according to the critic's personal reaction rather than by objective standards.[26] In the descriptive review the reviewer merely describes in brief compass the nature of the work being reviewed. He does not criticize it favorably or unfavorably; he only seeks to acquaint the reader with what the work purports to be. For the reviewer who is not thoroughly at home in the field, this is the only type of review he can write with fairness. Youthful reviewers, who unwisely attempt to review the works of writers better trained and better known than themselves, should rely solely upon the purely descriptive review. With such reviews, which at the best can be of only moderate value, there can be little objection, assuming that the description is accurate and intelligent.

It is the critical review that renders the real service provided it is written by a thoroughly competent reviewer. He saves the public much time and labor; he is perhaps better qualified to pass judgment than anyone else. His judgment should prove correct with the lapse of time. But it is the "critical" review written by the unscholarly reviewer that deserves severe condemnation. Such reviews have become so common that one's faith in reviews is shaken severely. The critical scholar feels he can read them and accept them with no less care than he would any other type of work. He feels the need of a critical reviewer of reviews. The reasons for such a prodigious number of unscholarly reviews are becoming generally recognized, but there seems to be no tendency to improve conditions.

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[25] A further discussion of criticism and the critic is found in Dr. Elizabeth Nitchie, *The Criticism of Literature* (The Macmillan Co., New York, 1928), Chap. I, a chapter devoted to the origin and nature of criticism, schools of criticism, a classification of critics, and the nature of scholarly criticism.

[26] Gard, *op. cit.*, pp. 7-12.

Perhaps one outstanding reason for the unscholarly reviews is the large number of publications waiting to be reviewed. There are not enough genuine scholars who can afford to give the time necessary to write a review of a critical nature. Since their critical and scholarly training will not permit them to write anything but a careful review, the public is seeing fewer and fewer reviews, relatively, come from the pens of the very best authorities. As a result the publishers virtually are compelled to send their new productions to poorly qualified reviewers.

Types of unscholarly reviewers

Some reviewers seem to regard a review as a convenient medium through which to parade their own assumed versatility, superiorities, erudition, and likes and dislikes, with relatively little space given to the real subject in hand. They seem to become intoxicated with the exuberance of their own verbosity, or as Shakespeare once said, "He draweth out the thread of his verbosity finer than the staple of his argument." [27] The outstanding impression gained from such reviews, which are usually supercilious and patronizing in nature, is that after all nothing of any real value can come from any pen other than that of the reviewer. Some of the manifestations of egoism and egotism are most remarkable, to put it mildly. One frequently searches in vain in "smart" reviews for evidence of a careful and analytical study of the work under review. Instead one is given vague impressions, innuendoes are cast about, oblique hints are given, but nothing really valuable and tangible is offered. From the great number of such reviews one may surmise that many reviewers believe that such wordy, vaporous, supercilious reviews are the earmarks of a capable reviewer.[28] Such reviews have little value aside from the light they throw upon the qualities of the reviewer. Some of them show little regard for the real value of the work, or the author of the work being reviewed, and sometimes are clearly malicious.[29] They obviously do not appreciate the fact that the true scholar is always humble. The reviewer would do well to remember that no one really loves a critic and for this reason it behooves him above all things to be a gentleman despite the fact that this idea appears to be growing more and more out of date, especially among those who write "smart" reviews.[30]

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[27] *Love's Labour's Lost*, Act V, Scene 1.

[28] Such reviewers and writers will find themselves properly mirrored by Gilbert Seldes, "A Super-American Credo," *The Saturday Evening Post* (July 21, 1928), Vol. 201, No. 3, pp. 23*ff*. Many of these same reviewers could profit exceedingly by reading Henry Fielding's sly and penetrating comments on them in *History of Tom Jones*, The Harvard Classics Shelf of Fiction (P. F. Collier and Son, New York, 1917), 2 vols. See particularly Fielding's Vol. I, pp. 187-188; Vol. II, pp. 49, 96, 97, 99.

Many reviews are being written by persons, who, while they would not fall in the class just mentioned, are in a class little if any better. This class includes those persons who attempt to review books so rapidly that few if any of the works are given careful attention. The reviewer turns through the book, gets a general impression, and writes the review. If the impression is favorable, if he likes the book, the review is favorable; if not, the helpless and hapless author receives an unfavorable review. A young and promising writer may have his reputation injured in a very serious manner through no fault of his own but through the fault of a thoughtless, careless, and indifferent reviewer. Such reviewers sometimes learn to their sorrow that the supposed omission for which the author was condemned could have been found in the pages which were not cut by the reviewer at the time the review was written. Prefaces and content tables are not a good guide for the hasty reviewer if he is inclined to become too critical! In the words of John Bakeless, ". . . the first thing for the reviewer to do is to read the book. There are, it is true, hardened hacks who omit this trifling formality and construct a plausible enough opinion from the publisher's blurb on the jacket, plus a handful of other people's reviews of the same book, and a hasty glance through a few chapters in search of something to quote. This is dishonest and unfair. It is not fair to the literary editor, who is paying for a genuine critical opinion. It is unfair to the author—for not even an author ought to be judged without hearing. It is unfair to the public, which is entitled to real criticism instead of an echo." [31] Henry Seidel Canby says: "The trouble with the reviewing of books is that it is not taken seriously enough. It is the beginner's chance for publicity, it is the padding of the Sunday supplement, it is the easy way to write for one who has nothing to say, it is the recreation ground of the literary amateur, it is the outlet for stale culture and sterile vanity. In a thousand instances it is everything but criticism and far from genuine reviewing. . . . Editors have regarded it as a literary accomplishment where fine words and learned reference might atone for lack of point and interest." [32] Mr. Canby further points out that reviewing is both journalism and criticism. The journalistic aspect shows itself in the fact that the news element is essential. A new book is news and this calls for a description of the book. After this, criticism steps in. "It must respond to the exigencies of critical analysis and synthesis, it must be aware of standards, it must see the forest behind the trees, it must weigh, discriminate, define. The most delicate of literary tasks must be conducted so as to satisfy the principles of art and the demands of journalism. How then can one expect good reviewing until writer, editor, author take it seriously, demand competence, reward effort, distinguish between bungle, 'blurb,' and accomplishment?" [33]

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[29] A select list of hostile if not unjust reviews aimed at distinguished literary men has been compiled by Albert Mordell in his *Notorious Literary Attacks* (Boni and Liveright, New York, 1926).

[30] Those who disagree with this contention might read with profit Arnold Whitridge, "Can Critics Be Gentlemen?" in William A. Drake (Ed.), *American Criticism* (Harcourt, Brace and Co., New York, 1926); also in *The Forum* (November, 1925). He has this to say (p. 329 of Drake): "Sympathy, freedom from callousness, the ability to sense a situation—these are the qualities that mark the gentleman, and these, we maintain, are also qualities that distinguish the best literary criticism."

Mr. Canby also notes certain limitations likely to be placed upon good book reviewing. With these the writer is in agreement. One is the idea that books must be praised. It is common for newspapers to print a reviewing section for the sole purpose of adding a little publisher's advertising. "It is silly because it is self-defeating. Perfunctory praise of books is either hysterical or flat. It cannot deceive and it does not deceive. A laudatory review derives its power for good from the evidence included or from the authority of the reviewer. But the critic who always praises, soon loses his authority, and the maker of perfunctory 'blurbs' has no evidence to offer and is driven to the stale phrases so familiar in publisher's publicity, phrases in which 'best,' 'vivid,' 'stirring' are so wearingly repeated. The most hopeless lowbrow knows that only a few out of many books are really excellent, and will not listen to choruses of unending adulation." [34]

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[31] John Bakeless, "The Art, Craft, and Mystery of Book-Reviewing," in William Dorsay Kennedy (Ed.), *The Free-Lance Writers' Handbook* (Writers' Publishing Co., Cambridge, Mass., 1926), p. 179.

[32] Henry Seidel Canby, "The Morals and Morale of Reviewing," in Kennedy, *op. cit.*, p. 169.

[33] Canby, *op. cit.*, pp. 169-170.

Another limitation is found in the idea that reviews must be "sprightly." The essence of good reviewing, as Canby says, ". . . is that the nature of the book be made clear and its merits rated. If that is well done the review is interesting. Smart irrelevancies, quips of style intended to advertise the reviewer, not the book, cheap sneers, the egoism of a soul that thinks itself more important than masterpieces, are impertinent in reviewing. There is nothing more annoying than smart writing that says nothing to the purpose, and that is what usually comes of 'sprightly' book reviewing." [35]

His third limitation lies in the idea that friends (yours and the paper's) must be petted, and on this point he remarks that "curiously enough honesty (courteously administered) pays here as elsewhere." [36]

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[34] *Ibid.*, p. 170. See also Nitchie, *op. cit.*, pp. 27-29.

Professor Gard says (*op. cit.*, p. 43): "An examination of review papers made by Louis Bromfield revealed that during one year reviewers had named 137 novels as 'the best novel of the year,' of which some were labelled as the best novel of the decade, or of the century."

[35] Canby, *op. cit.*, p. 170.

[36] *Ibid.*, p. 171. The idea of petting one's friends of course is not confined to book reviewers. Unfortunately it is all too common among authors of books who would expect to be and often are ranked as scientific persons. Any one who is not blind must know that petting one's friends and those whom it appears desirable to cultivate has become a great game among writers. Cliques and mutual admiration societies, characterized by snobbishness and monopolistic tendencies, infest almost every group of writers. While such facts are not often admitted in polite society, even there the game is played with solemn earnestness. There is such a thing in so-called scholarly writing as slapping the right people on the back, making complimentary references only to the works of those authors of established position regardless of the genuine merit of the works involved or of the fact that there are better works in existence. Real scientific independence of mind in such instances, of course, is lacking. Social climbing tendencies have served as real obstructions to the development of a thoroughly scientific attitude. Doubtless many a worthy manuscript or book has been

Some reviewers, who are presumed to be fully occupied otherwise, write more reviews in a given length of time than it is humanly possible for anyone to write, did they do nothing else than read those books. Such reviews are not only worthless but generally are harmful—to the public, to the author, to the publisher, and perhaps in time to the reviewer himself. Some publishing houses soon learn the habits of certain reviewers, and frequently remove them from their lists, no longer permitting them to receive their books for review. It is unfortunate that more of this is not done.

Probably in the lowest class of all—and other classes of unscholarly reviewers undoubtedly could be mentioned[37]—is the reviewer who writes his review, not with the value of the reviewed work uppermost in his mind, but rather with his impressions of the author furnishing the keynote to the review. If the author of the work is a personage of consequence, of well-established reputation, perhaps a person of great wealth and social position the reviewer may be of such a calibre as to write a favorable review, for no other reason than to win favor with the person in a position to bestow something of value. In the same manner, if the writer is unknown to him, or even worse, known and disliked, the review is most likely to be hypercritical and unfair both to the work and to the author.

This is not a happy picture, and the immediate possibilities of changing it are not very bright.

Needed reforms in book reviewing

If reform in our book reviews comes it probably will come slowly. Publishers should endeavor to secure genuine scholars

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born to blush unrecognized due to the ability of powerful cliques to ignore all but the elected. Scientific objectivity combined with the fine humility and modesty like that characterizing Charles Darwin is altogether too rare today. Reviewers could well afford to ponder these observations in appraising the scientific value of the works under review.

[37] Professor Gard has this to say (*op. cit.*, p. 35): "Anyone who listens to the conversation that goes on in the office of a literary editor is soon disillusioned as to the motives of many reviewers in selecting the books which they wish to review. One will ask the editor for certain volumes because he admires their bindings; another grabs for books with high price-marks, with a view to selling them after they are reviewed; a third wants works of literary importance, in order to gain more space and better position for his reviews, and thus add to his prestige as a contributor."

to review their publications by learning more about the persons who do their reviewing; and this is a real problem due to the disinclination of such scholars to devote too much time to the reviewing of books. As a result of this difficulty many books go to reviewers who use this means to secure copies, a practice that should be difficult to believe. In such cases the publisher probably pays more for the review than it is worth. Sometimes books also find their way into the hands of the inexperienced who believe it a good way to break into print and to begin writing. It is an interesting commentary that while publishers may exercise considerable caution in selecting the writer of a work, this work may fall into the hands of a reviewer practically unknown to them. Such practice may defeat earlier precautions.

Perhaps some good could be accomplished if the author, whose work suffers unjustly at the hands of the reviewer, would adopt the plan of exposing the reviewer through the medium of the same periodical in which the review appeared. This, of course, presents difficulties. Many writers would consider it undignified, if not unnecessary, to attack and expose an unscholarly review. Other writers, justly condemned by an able reviewer, would welcome the opportunity to attack a scholarly review for no other purpose than to attract attention. A better, but a much slower, means of correcting the situation will be found in giving those persons who are most likely to become our reviewers a thorough training in the principles of critical scholarship. Until that millennium arrives, book reviews must be treated exactly like other uncritical material—read with all the critical senses fully alert.

Suggestions for the reviewer

Those who receive books for review should take stock of their capacities honestly and if they know the book is beyond their depth or field of major interest they should return it to the publisher or write a harmless descriptive review. It should be needless to say that in scholarly reviewing all the principles of critical scholarship are applied and nothing short of a mastery of these will make the reviewer competent.

The beginning reviewer should notice that magazines have different bibliographic formulæ. Each develops its particular form of heading and manner of punctuation. These should be recognized and studied by the potential reviewer. It is expected that he will conform exactly to the formalistic requirements followed by the magazine. Failure to do this is an indication of lack of experience and is irritating to the editor who must keep his magazine typographically uniform. Editors must look to reviewers who are responsible in matters of small detail. Some magazines take the precaution of sending out specimen forms with the review copies and the reviewer should check carefully his form with that of the specimen or with those of the magazine in which the review will appear.

Mr. Canby believes that the remedies for unscholarly reviewing lie in the reviewer's hands and that good reviewing will win its way. The reviewer who goes to work properly has, he thinks, three objectives. He states them admirably and the beginner should profit by them: "A definition of his book, a transfusion somehow of its tone and quality to the reader, and an estimate of its essential values."[38] Dr. Nitchie put it well when she said that "criticism involves the understanding of a book, the appreciation of it, the enjoyment of it if it proves worth enjoying, and the determination of our judgment as to its value. This large conception of criticism lays a tremendous responsibility upon the critic. It at once rules out the popular conception of criticism as fault-finding. There is a feeling, stronger than we perhaps realize, among inexperienced critics, that the proper way to begin to criticise is to point out the bad qualities. . . . The good critic looks first for the virtues of a book. In evaluating a work of art he must take note of faults as he sees them; the honest critic can do no less. But the notice will be not the main object unless the book is utterly bad."[39] The reviewer should remember that it is one of the deplorable and characteristic weaknesses of human nature to look for faults rather than virtues in others. In another place, Dr. Nitchie says, "The great trilogy of characteristics that the ideal critic should possess are tolerance, sympathy, and sincerity, and the greatest of these is sincerity." [40]

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[38] *Ibid.*, p. 173. Professor Gard takes substantially the same point of view. See his Chap. III.

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[39] *Op. cit.*, p. 11.

One of the first precepts of good practice is to digest the work thoroughly. Next it should be defined clearly. Mr. Canby insists that most reviewers begin by telling the story or outlining topic by topic the contents of the book they are going to review. This is tiresome, and in a novel, where plot may be everything, clearly unfair. "It is not defining a book; it is gutting it. The book can be much better defined by placing it in its kind and by a careful description of that kind and the peculiarities of the specimen." [41] To define a book is to tell "what the book *does* and *is* as an organic whole." [42]

In the third place, the value of the work should be estimated with all the certainty possible and in a manner which will leave no doubt as to what the reviewer thinks. It is implied, naturally, that the reviewer recognizes that the work was written for a certain purpose and for a certain class of readers and must be judged in the light of this purpose and of these readers' desires and standards. To criticise a work on any other basis is the height of injustice and convicts the reviewer of lack of judgment. No reviewer has a right to condemn an author for not doing what he did not intend to do or for doing something that the reviewer does not happen to like. He must meet the author on the ground of the author's purposes and see "how the task he had to do stood before his own eye, and how far, with such means as it afforded him, he has fulfilled it." [43] Or as Curl put it, the reviewer can do much to simplify his task by asking the famous three questions of Coleridge: "First, What did the author intend to do? Second, How did he accomplish his purpose, well or ill? Third, Was the purpose worth striving for?" [44] No work can be valued properly without a knowledge of the purposes of the author and of the standards of value applicable to certain classes of readers and to certain classes of literature.

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[40] *Ibid.*, p. 20.

[41] *Op. cit.*, p. 173. For an account of the standards required by the editors of leading newspapers and periodicals, see Gard, *op. cit.*, Chap. V.

[42] *Ibid.*, p. 174.

[43] Nitchie, *op. cit.*, p. 23.

[44] Melvin J. Curl, *Expository Writing* (Houghton Mifflin Co., Boston, 1919), p. 215. See his Chap. VI on "Criticism."

Good reviewing "is a shrewd and feeling statement, backed by knowledge, pointed by observation, inspired by candor, and warmed by genuine interest, of what a book is and is worth, worth for us, worth as science or as literature."[45]

There are some other final suggestions which the beginning reviewer should ponder profitably whether he be writing a review or any other type of work purporting to be scholarly. Make the presentation simple, straightforward, and unadorned. Avoid the rhetorical, for it is dangerous if strict truth is to be secured. Scrutinize all comparatives and superlatives, every adjective and adverb. There is no room for emotions, coloring, or literary flights. Sobriety is imperative. Parading of erudition is odious.[46] Acknowledge all borrowings through footnotes or parenthetically, but do not use footnotes for ornamental purposes. Make references exact and according to good form. Avoid second-hand quotations, worthless hypotheses, imprudent assertions, puerile generalizations, extravagant statements, embellishments, patriotic, religious, or moral flights, expressions of personal feelings. Develop a strong, terse, incisive style. Careful thought is a valuable piece of equipment to be employed at all times.

It is only when reviewers attain these standards of scholarly reviewing that their proper functions will be performed; and it is only then that we may look to reviews with some degree of confidence for scholarly estimates of the proper rewards and punishments to be meted out to the would-be scholar.

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[45] Canby, *op. cit.*, p. 176.

[46] Harry Hansen, literary editor of the New York *World*, put it well when he said: "It is unnecessary for a reviewer to air his learning. Let us hope that he has it." In Gard, *op. cit.*, p. 51.

CHAPTER IV

CRITICAL ANALYSIS OF THE NATURE AND AUTHORSHIP OF SOURCES

It may impress the reader as illogical to present at this point the critical principles employed by scholars in their analysis of the nature and origin of sources and to defer until later chapters such questions as those involved in the proper methods of gathering data, using libraries, both general and special, compiling the bibliography, and similar questions. It is not illogical, however, because the survey of the available sources of information involves the principles of methodology to which we shall address ourselves in this chapter. Indeed, these principles are applied from the earliest to the latest stage of the investigation, and it is deemed better to review them first, after which a detailed discussion of the considerations which should guide in the gathering of data, the use of libraries, the compilation of the bibliography, and related questions will assume greater significance and meaning.

Necessity for a critical examination of the origin and transmission of documents

After the research worker has determined tentatively the problem which is to engage his attention, his next step is to proceed at once with a survey of all the available documents. The manner in which he will do this depends upon his previous acquaintance with them. If he is experienced in the field or fields of his problem and is already acquainted with the available literature bearing upon his problem, he may be presumed to choose his problem wisely and to proceed at once with the critical analysis of his sources. If, on the other hand, he is unacquainted with the literature and is beginning a preliminary search for documents, constructing a tentative bibliography, and learning the nature and reliability of his sources, he will be called upon to exercise certain principles of critical analysis of sources at once. The degree to which these principles are used at this stage depends therefore upon the scholar's familiarity with the bibliography and with the nature of his problem. Once the bibliography has been compiled and the problem properly delimited, the scholar proceeds at once to a critical examination of the nature and manner of origin and transmission of the documents included in his bibliography. Our discussion, therefore, will assume that he has reached this stage in his research; the use of these principles in preceding stages is a matter of degree and dependent upon good judgment.

External criticism

The first logical step for the investigator to take after securing possession of his documents, particularly if he is not already thoroughly acquainted with them, is to proceed with the preliminary examination of the sources. This procedure, commonly known as *external criticism*, is divided conveniently into two parts: (1) textual criticism, and (2) a critical investigation of the authorship of the documents.[1] Textual criticism is concerned with the determination of all the conditions which may have influenced the production of the document, the date, the place, the purpose, and the circumstances of its composition, whether it is an original or a copy, whether a sound or a corrupt text, whether in complete form or partially destroyed, and whether susceptible of emendation.

The investigation of authorship is concerned with a determination of the authorship when no author is given or when it is open to question. The scholar will learn also the author's qualifications and abilities for his work, his training, mental characteristics, social status, bias, interests, linguistic habits, and all other facts concerning him that may throw light upon his value as a producer of facts and discoverer of truth.

Both problems of external criticism are highly important and have given rise to certain principles applied in scholarly research. To these this chapter, in the main, is devoted.

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[1] For an excellent discussion of external criticism, see Charles V. Langlois and Charles Seignobos, *Introduction to the Study of History* (Henry Holt and Co., New York, 1898), Bk. II, Chaps. I-V, to whom the author is indebted for many suggestions.

External distinguished from internal criticism

Before proceeding with a study of external criticism it is well to distinguish it from those principles commonly grouped under the caption, *internal criticism.* The latter is concerned with the proper procedure to be used by the scholar in determining just what statements in the document may be accepted as true. Briefly, it is an endeavor to determine the literal meaning of the author, his real meaning, his good faith, and finally his accuracy. While in actual research there is no clear division between external and internal criticism, the formal separation of them into two separate stages for systematic treatment in a book on methodology is necessary in order to give the beginner a clear conception of their nature and significance. To the uninitiated such formal division may appear as a species of pedantry, but this feeling will disappear as he becomes better informed and better trained in the principles of scholarly methods. The careful student of a motor, for example, studies the various parts separately and masters each principle, after which he is enabled to understand and to use the mechanism when the parts are combined into a unit in which all are working together simultaneously. The critical sense of the scholar becomes so highly developed that he may apply all the principles of external and internal criticism to a given page numerous times and within a brief interval of time.

If the document is of such a nature that its interpretation is debatable, the critical investigation is divided into the two parts or stages as indicated. If the meaning of the document is clear at the outset, the two stages of criticism become merged into one, or more accurately, the reader begins the critical examination (internal criticism) of the document at once, keeping the mind alert for all doubtful passages on which he will concentrate special attention. In documents of this class we generally possess at the outset considerable general information concerning the author and his reasons for producing the work (the questions to be considered in external criticism) and are ready to begin a mental analysis of the document. The processes of external criticism are not forgotten, however, but are merged into the internal criticism, the well-trained critic applying the processes simultaneously.

But the beginner cannot arrive at this stage at once. He must begin with a study of the separate stages, master the principles of each, apply them repeatedly, and finally the habit will develop. It requires careful study on the part of an interested and sympathetic student to develop these critical habits; one cannot rely upon native ability or instincts to develop them. Once developed, the critic will apply the principles of external and internal criticism simultaneously or separately, depending upon the nature of the investigation. In this book the two stages are treated separately to meet the needs of the beginner and to show how the principles are logically applied when attacking documents whose interpretation is open to question. Certain types of cases call forth just the type of procedure formally outlined in this text; they may not be the most common ones but they are of a type to call forth the best efforts of the highly trained critic. A research worker trained along the lines indicated should find no difficulty when confronted with other kinds of problems which will be less complex in nature.

The purpose of any serious-minded person in studying methods of scholarly research and criticism should be to develop a methodically analytical mind, uniformly skeptical and distrustful of all but established facts. He must aim to develop his critical sense until he is able to shed his respect for all that is not proved to his satisfaction. He must learn to treat everything he hears and reads as mere presumption until demonstrated to be true. He must free himself from the deference which the untrained feel toward various artistic devices used both in speech and in writing. In short, he frees himself absolutely from every device designed by those who wish to trap, persuade, and impress others. He must be a mentally free man in search of facts, one who knows how to determine facts, and one who has confidence in his ability to recognize them.

Specialized types of methodology

A critical scholar undertaking the work of external and internal criticism may find it necessary to work in certain auxiliary scientific fields. This, of course, complicates his problem and renders procedure slow and painful. The research worker in history, for example, may find it necessary to work in such specialized branches of learning as palæography, archæology, diplomatics, philology, heraldry, chronology, epigraphy, sigillography, numismatics, or chirography. Each of these fields has developed its own particular methodology—or perhaps one should say technique—and any scholar who finds his work leading him into such specialized branches of learning must pause and acquaint himself with the particular method or technique of applying the principles of critical scholarship involved, if it differs from the general techniques of the social science field or fields with which he is acquainted, before proceeding with his research. The alternative is to consult with experts in these highly specialized fields. A perusal of the literature of methodology in any of these highly specialized fields soon would convince the reader of the absolute necessity of such procedure. Only in this manner can he protect himself from serious errors and provide himself with the proper defense against forged documents and other possible causes of error.

This book makes no effort to cover such specialized types of methodology. It is concerned with the fundamental principles of critical scholarship applicable to all social sciences and with the historical, direct observational, and field (including statistical, sampling, case, and census) methods or techniques since these are practically all-embracing in applying scientific principles in the social sciences. Specialized techniques, resulting from the splitting of the social science field into specialized groups or fields, are subsidiary and supplementary to the fundamental principles of critical scholarship comprehended in scientific methodology. A method is either scientific or not scientific, and within the principles of scientific methodology there may be different techniques in applying these principles, but not different kinds of scientific methods.[2]

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[2] A brief but valuable discussion of methods in the fields of Palæography, Diplomatics, Chronology, and Chirography, is found in John M. Vincent, *Historical Research* (Henry Holt and Co., New York, 1911), Chaps. IV-VII.

The research worker in the social sciences should find it profitable also to consult Howard W. Odum and Katherine Jocher, *An Introduction to Social Research* (Henry Holt and Co., New York, 1929). These authors have divided the methodology of the social sciences into various methodologies or "approaches."

Textual criticism

An investigator may expect to be confronted with records and documents of every description: new and old, well preserved and mutilated, originals and copies, the carefully written and carefully published, and the poorly written and the poorly published. Often the documents may be copies of copies, several steps removed from the original, and in some cases, especially in the case of ancient and mediæval documents, the copies may be very poor and very inaccurate. It thus becomes quite clear that no careful investigator will accept his documents without a critical examination of them.

If he has copies in his possession, it is his duty to secure the originals if reasonably possible. Of course if there are no originals the worker is compelled to rely upon the copies. The natural tendency, however, is to rely upon copies even though the originals may be in existence. This is particularly true if the worker knows he will experience some difficulty in securing access to the originals. No investigator should be excused for using copies if he has reasonable access to the originals.

Textual criticism of an original document

When the investigator has in his possession the original of the author—perhaps a document in the author's handwriting—his task appears quite simple. If he should wish to copy the document he will soon learn that it is rather difficult to make an exact copy. To do so requires more care and attention than many, if not most, people are capable of giving. In recognition of this fact, photographic reproduction is being resorted to more and more.

The question may arise whether an absolutely accurate copy implies a reproduction of the author's obvious mistakes and poor form. Authorities are not agreed on this question. Some maintain that the reproduction should be exact, including all errors. This is undoubtedly the safer course and is hardly open to criticism. Writers who follow this practice ordinarily follow the errors with a bracketed word, [*sic*], meaning *thus*. This indicates to the reader that the transcriber chose to copy the text exactly but was well aware of the inaccuracies. Other writers insist that the copyist or editor should correct obvious errors and unify spelling and capitalization of a document when these errors and lack of uniformity can have no interest philologically or otherwise. To follow the second procedure is not as absolutely safe as the former. The editor may not always know the significance of the lack of uniformity; the "errors" may be apparent, not real; other scholars may find a significance in these things that are not fully grasped by the copyist who chooses to exercise his discretion in making alterations. When a copyist begins to exercise his discretion one can never be quite certain that the corrected "mistakes" are always "obvious" ones.

Textual criticism of copies

If a worker engaged in research knows he is working with the only copy, the original being lost or inaccessible, he must exercise great caution in the use of the document. Variations from the original may exist either through error or through fraud. Certain types of errors are easily detected and corrected; others are very difficult if not impossible to detect. Even though detected, the correction (emendation) of the errors or frauds is very difficult in some cases, as, for example, in the case of important omissions. Accidental errors ordinarily are easily detected through a confusion in the sense, a meaningless repetition of phrases, words, syllables or letters, omissions of letters or syllables, false divisions between words, or incorrect punctuations. Conjectural emendation requires great care and ingenuity. For some scholars it has become a fine art.

Investigators may find themselves in possession of more than one copy, the original being lost or inaccessible. On the whole, this places the investigator in a position far more advantageous than if he has but one copy and is obliged to rely upon conjectural emendation.

Often the mere mechanical comparison of the different readings will be sufficient to remove the uncertainty or obscurity from certain passages. In certain types of research, however, it becomes of the utmost importance to make a very careful study of all the variations in order to arrive at the original text if possible. The meticulous scholar finds himself confronted with difficult problems. Unlike the usual investigator he will resist the natural impulse to use the first document that comes into his hands; neither will he accept the oldest copy out of several as necessarily the best. Finally, in his study and classification into groups of the different copies he will not permit himself to be guided or influenced by the majority of copies since the majority, obviously, may be copies of one another or of one in the group which may be inaccurate, while the one or few may be exact copies of the original. It becomes clear that in certain very minute and detailed investigations involving the use of materials in situations like the ones presented here, the investigator is called upon to use his most critical faculties in every way. Such investigations are relatively rare except among a very few of the highest types of research men. They not only tax the critical faculties of the best scholars to the utmost but require a tremendous amount of time and effort. The results are frequently of such a nature as to be of little interest except to a limited few. Most of the work of this kind is done by specialized scholars working in very narrow fields of history. They endeavor to edit and bring new texts to light or improve texts already known. Certain learned societies devote a great part of their resources and activity to this type of work. The usual investigator may work for a considerable length of time among a great variety of documents without finding himself confronted with such intricate problems. But he never knows when he will be called upon to solve such problems and should be acquainted with the general principles employed by scholars in such work.

Textual criticism only a preliminary to more important work

When the investigator is confronted with the type of documents mentioned immediately above, he is compelled to apply the principles of textual criticism to his sources as a necessary preliminary to any further procedure with his work. All his work of comparison, conjecture, and emendation, is done in an attempt to secure a reproduction of the original text in so far as possible. Upon the completion of these preparatory steps he is ready to attack his major problem and in no sense is he farther advanced upon his work than he would be had he had access to the original document which would have rendered unnecessary most of these preliminary labors. In all probability he is not as well off since it is quite possible that his preliminary labors have not secured for him an exact reproduction of the original.

It becomes clear that the investigator is fortunate indeed if he has access to originals and can dispense with these tedious preliminaries. Nevertheless, all investigators must keep their critical senses alert at all times since the problems that confront them, when working under conditions that would appear most favorable to the casual investigator, may prove far from simple at any time.

Investigating the authorship of documents

The investigator must always raise three questions: (1) What is the place of origin of the document? (2) Who is its author? (3) What is its date? A document is absolutely worthless as a source of information if the investigator is in absolute darkness on all of these points. To answer these questions is the purpose of the critical investigation of authorship. Its purpose is to rid ourselves of documents that would have misled us. It is a necessary preliminary step to serious work upon the major problem in hand.

Place of origin of the document

Ordinarily a printed book or pamphlet bears the mark of its origin so far as the place of printing is concerned. Sometimes it is important to know just where and under what circumstances the document was composed. In most books the signed prefaces usually give an indication of these facts. But in many kinds of documents there is no such indication and it often is imperative that these facts be known, particularly when the author's name and the date of the document are unknown.

If the place and circumstances of origin are not indicated clearly, a careful study of the document becomes necessary to determine these facts. The critic will be compelled to look carefully to the language, dialect, style, idiomatic peculiarities, events, regions, and persons mentioned, all of which most certainly will enable him to establish the desired facts. The place of printing may not be relied upon since documents, for many reasons, may be sent to foreign countries to be printed. Neither may language nor dialect be used without extreme caution as determining factors, since the work may have been translated or written in a certain dialect to satisfy the readers.

A critical investigation of authorship

The natural tendency of the human mind is to accept without question all indications of authorship. It is probably one of the most common forms of public credulity and one very difficult to overcome. In the usual type of investigation carried on today the indications of authorship are very precise and seldom open to question. For this very reason investigators become unwary and may be caught unexpectedly. But the most precise indications of authorship are never sufficient by themselves. They afford only strong or weak *presumptions,* depending somewhat upon the type of document. No matter how safe the field may appear to be, no scholar can afford to permit himself to be off his guard; he must always keep that wholesome attitude of skepticism with him. While hoaxes, forgeries, and various kinds of trickery are more common in some fields than in others, they may be met anywhere. Eternal vigilance is one of the requisites of scholarly work.

Professor Allen Johnson thinks that it is more important to determine the degree of reliability and personal characteristics of an author than it is to discover his name.[3] Occasionally these facts concerning an author can be ascertained without learning his name. Professor Johnson cites as an example the case of the extracts from the diary of "A Public Man," published in *The North American Review* in 1879, which gave an intimate view of personalities at Washington in the transition period from the administration of Buchanan to that of Lincoln. The identity of the diarist was not disclosed but enough could be learned of his standing and personality (he appeared to be a Republican United States Senator) to give the record considerable value. While his identity would have added some value it became of secondary importance with the other important facts known.

In any case, it is important to know a writer's nationality, vocation, position, class, party affiliations, religion, and training if his value as an author is to be determined.

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[3] Allen Johnson, *The Historian and Historical Evidence* (Scribners, New York, 1926), pp. 59-60.

Some reasons for false authorship

Hoaxes, frauds, forgeries, and trickery are as extensive as human activities. The reasons for them are as numerous as individual interests and problems. The means of detection are limited only by the ingenuity of the human mind. The methods developed have become an intricate science employing the best efforts of scientists in every field. Not only is the ordinary scientific investigator an important factor in their detection, but we are rapidly developing specialized experts, such as handwriting and finger printing experts, to solve certain problems. The type of work done by some of our detectives in modern times represents the finest type of research in the specialized problems involved. A scholar can profit much from a study of modern methods of detectives. This may explain in part why so many scholars read detective stories for relaxation.[4]

It is useless to attempt to give all the reasons for false authorship; it may suffice to mention a few. It is a common practice to attach well-known names to works in order to enhance their value. In such cases the gathering of the material and perhaps the composition are done by unknown persons. Frequently the apparent author has never seen the works before they appear in print. This practice does not appear to be on the decline, if indeed, it is not increasing rapidly.

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[4] On this point it is interesting to note the comments of the author of our recent outstanding modern mystery stories who writes under the pseudonym of S. S. Van Dine and who is assumed to be Mr. Willard Huntington Wright. He says: "There has been much speculation and theorizing as to why all classes of readers universally enjoy arm-chair sleuthing. But the real reason is, I believe, that the appeal of a good detective novel is the same as that of an elaborate and interesting puzzle. It puts the mind to work and keeps it busy, for in any first-class detective story the reader takes fully as much a part in the solution of the problem as does the detective himself. . . . When the analysis is complete and the clues have been fitted in place, the detective novel, as well as the cross-word puzzle, becomes an interrelated unit. Consequently, the reader has a feeling of satisfaction, of difficulties overcome, of order having been produced from chaos. This is why, I think, the so-called highbrow reader, who would be positively humiliated if caught with an ordinary popular romance, reads detective novels, and even flaunts them brazenly in the faces of his acquaintances.

"Good detective stories appeal directly to the intelligence: they are a source of mental stimulation. The finest minds of America today read them. And I'll say this: No reader of detective fiction is ever stupid. Without an active logical mind, capable of gripping a difficult problem, one would never turn to detective fiction for pleasure. As Carolyn Wells has said: 'Show me an inveterate reader of mystery yarns, and I will show you a quick, intelligent brain.'" S. S. Van Dine, "I Used to be a Highbrow but Look at Me Now," *The American Magazine* (Sept., 1928).

Sometimes names are appended to works in order to serve the reputation of particular persons. Political personages and public heroes, for example, have articles written for them by competent persons in order to bolster up their reputations as authorities or scholars in fields where they are incompetent or in cases where they are too much occupied with their own activities to produce the desired article or book. It is quite common for a reporter to interview a prominent personage, write the article and sign the name of the party interviewed. The method has become so objectionable, however, that the interviewed individual frequently objects to such obviously dishonest procedure, and interviewers now resort to articles explaining that they are reporting the facts as told to them by Mr. So and So, giving prominence to the name of the person interviewed and giving their own names, as the interviewers, less prominence.

Occasionally names are attached to mystify posterity. Henry S. Canby points out that while much of the mediæval writing was anonymous there is very little to be found today due to the insatiable desire of modern writers to attract attention. He says: ". . . when everyone flings, not only his opinions, but also his name and idiosyncrasies in your face, there is a phenomenon worth discussing. . . . It may often be vulgar, but this glorification of the capital *I* is not explained by calling it vulgarity. What we are encountering is a panicky, an almost hysterical, attempt to escape from the deadly anonymity of modern life, and the prime cause is not the vanity of our writers, but the craving—I had almost said the terror—of the general man who feels his personality sinking lower and lower into a whirl of indistinguishable atoms, to be lost in a mass civilization." [5]

There are all the different forms of borrowing commonly known as plagiarism.[6] The reasons for these types of false authorship, as for forgeries, are due either to dishonesty or to a misconception as to what are the acceptable principles of sound scholarship. The pseudepigraphic literature of antiquity and the Middle Ages is enormous. Certain forgeries, now famous, passed as authentic for a long time. The papal letters and decretals attributed to Isidorus Mercator (commonly known as the Pseudo-Isidorean Decretals) which came into notice in the 9th century were not questioned until the 16th century. Ninety-four of the most important letters are now recognized as forgeries written for the purpose of exalting the papal power.[7] One of the principal reasons for forgeries seems to be the desire for literary notoriety or the desire for gain in some form. So long as public credulity exists there always will be attempts to take advantage of it in one form or another.[8]

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[5] Henry Seidel Canby, "Anon is Dead," in William A. Drake (Ed.), *American Criticism* (Harcourt, Brace and Co., New York, 1926), pp. 6-7; also in *The American Mercury* (May, 1926).

Common types of forgeries are seen in the inventing of proverbs, epigrams, or brilliant sayings and attributing them to famous or notorious persons. As Vincent says, "A critical juncture in a hero's life seems bound to produce a witticism or a philosophical epigram. The unities of time and place call for a brilliant thought and the demand is likely to be supplied. Men have said appropriate things at the right time, but so many have been invented for them that all have to be scrutinized." [9] Many of these fine sayings, as Vincent so aptly points out are ". . . afterthoughts, or what the French have called *'L'esprit d'escalier.'* These are the things which one might have said, but only thought of while on the way down the stairs after the affair was over." [10]

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[6] Vincent, *op. cit.*, pp. 112-119, gives some interesting illustrations of borrowing or plagiarism by some leading chroniclers of England during the Anglo-Saxon period. See also H. M. Paull, *Literary Ethics* (E. P. Dutton and Co., Inc., New York, 1929), *passim*. This book deals with many of the literary crimes and misdemeanors and is replete with illustrations.

[7] On the method of exposing these and other forgeries, see Johnson, *op. cit.*, pp. 66-70. These forgeries and the famous *Donation of Constantine* also are discussed in Vincent, *op. cit.*, pp. 31-32. He also mentions briefly (p. 34) the wholesale forgeries of letters attributed to Robert Burns.

[8] Discovery of anachronisms has been a common method of detecting forgeries. See Vincent, *op. cit.*, pp. 28-29, for an interesting account of this method as applied to the history of Croyland Abbey in England.

[9] *Op. cit.*, p. 34.

[10] *Ibid.*, p. 35.

Invented speeches, the putting of words into the mouths of others, while the usual literary device in fiction, may be considered a form of forgery in historical material. This practice was fairly common among early historians and is found occasionally today. Such frauds, of course, have no value as source material.

An amusing type of forgery is to be found in the Congressional "speeches" mailed by Congressmen to their respective constituents. While many of these so-called speeches have never been delivered on the floor, bracketed indications of much applause are frequently interspersed throughout the "speeches."

Fabricated genealogies are still common among those who attempt to bolster up their prestige by cultivating a family tree. Innumerable frauds have been perpetrated in the effort to gather some fruit from a family tree. Where property and honors have depended upon the establishment of lines of descent the temptations and the attempts to fabricate have been tremendous. Vincent says with respect to the situation in America: "The adoption of a family tree or the assumption of a coat of arms is no longer a serious matter to the historian in America from the documentary point of view. Except as a social phenomenon of more or less amusing interest the subject does not afford much material."[11]

Interpolation for the purpose of deception is one of the common types of forgery which causes the scholar much trouble. Words, phrases, paragraphs, and pages are sometimes inserted in documents, and to separate the true from the false frequently requires from the scholar the utmost use of his discriminating faculties. The principles which guide in the detection of interpolations are discussed under Internal Criticism below.

All readers are acquainted well enough with forgeries of business documents, art works, relics, and antique furniture to render a discussion here of such practices superfluous.[12] Every type of business, every branch of the arts and of the sciences has its particular problems and methods in the detection of forgeries, but in any field the best preparation for detection, as pointed out by Vincent, ". . . is the constant study of genuine specimens. Then the senses will be keen to note any variations from the regular product."[13]

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[11] *Ibid.*, pp. 37-38.

[12] See Riccardo Nobili, *The Gentle Art of Faking* (Seeley Service and Co., Ltd., London, 1922). This book is a history of the methods of producing imitations and spurious works of art from the earliest times up to 1922 and provides some excellent warnings for those persons afflicted with "collectomania."

Methods used in the investigation of authorship

The chief method used in determining the authorship of a document is internal analysis. The document is studied carefully for any light as to its origin, its authorship, and its date. The problems may range from the very simple to the insoluble. The document may be modern, intact, and printed, or ancient, mutilated, and in the handwriting of the author or authors. It may be the original with one author, or a copy with one or more authors. Obviously it is almost impossible to lay down rules that will serve as infallible guides even in a great majority of cases. Only the most general principles can be advanced, the chief virtue of which is to awaken in the mind of the investigator certain lines of thought that will cause him to exercise his critical senses in the proper manner. No rules will permit him to dispense with critical judgments. Each questionable document will present new problems.

In general, the same principles are used to determine both the origin and the authorship of documents. A careful study of the thought, purpose, and phraseology of any document will reveal much as to its origin and authorship as well as of the date. Particular facts will be mentioned with or without approval and certain opinions expressed which will throw some light on the character of the author and aid in locating him in his environment. A careful comparison between the various elements of the document and the corresponding elements in similar documents known to the investigator probably will add new light. Quotations, references, footnotes, and allusions made by the author to himself will do much to help the investigator locate the author and learn the circumstances of the origin of the document. The point of view from which the author views his events usually is clearly indicated and this will establish closely the field to which he belongs. Indeed, enough facts may be revealed in this manner to indicate rather clearly his credibility as an author even though his name is not known. Quotations from the document by other writers may give additional clues to the authorship if indeed the authorship is not indicated specifically, but here again the critical scholar will be cautious in accepting one writer's indication of the authorship since he may have been in error. Such indications by two or more critical writers working independently of each other usually, but not always, may be accepted as reliable.

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[13] *Op. cit.*, p. 41.

If the authorship of a work is suspected the various works of the supposed author or authors should be studied in order to compare closely the style, peculiarities in the use of words and expressions, the methodology, and the limits of the vocabulary. Such a study should yield the proper results.

These problems may become very involved when the document is the result of more than one author's work, and it is of importance to analyze the document into its constituent parts and to determine the authorship of each part. Some documents show a confusion of authorship through interpolations and continuations. When the documents are in writing it is easier, ordinarily, to detect the additions through erasures or changes in writing. If the document is but a copy of one containing interpolations and continuations the problem is much greater and detection is possible only through careful study of the contents and a comparison with other copies which reproduce the original text as it existed before the additions were made, if such copies exist. If no other copies exist, or if all copies contain the additions, the only possibility of detection lies in a careful study of the style to see if it is uniform throughout, to see if the same spirit prevails throughout, to see if there are contradictions or gaps in the sequence of ideas. Such analysis may or may not reveal authorship.

If investigation shows the document is but a copy from other sources, perhaps a case of pure plagiarism, then it is necessary to carry the investigation back to the sources since the information in the document is no better than the sources which it represents.[14] But this subject, while in a sense a question of the real authorship, may be studied more profitably under the heading of

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[14] See Johnson, *op. cit.*, pp. 64-65, for an account of the plagiarism of Guicciardini, one of the famous historians of the 16th century.

Internal Criticism treated in the next chapter, since it is primarily a question of the value of the author's information. In this chapter we are concerned primarily with external criticism, although it is obvious that both types of criticism overlap each other at many points.

Determination of the date of the document

Ordinarily an undated document is worthless for historical purposes and it is necessary for the critical student to establish the date as accurately as possible if he wishes to make use of the material. Quite often the establishment of the exact date of a document is of the utmost importance.

In books the date given by the author at the close of his preface usually is more accurate as to the latest dates covered by the facts included in the work than is the publisher's date of publication. Books may be in publisher's hands any length of time varying from a few weeks to over a year. But even the dates attached to prefaces may be considerably later than the latest of the facts included. Only a study of the date of publication, date of author's preface, and the latest facts included in the book will reveal the true situation. It is the conventional procedure, however, in reporting the date of a document to use the publisher's date of the particular edition used, and this should not be confused with the dates of the reprints which have no significance so far as the included facts are concerned. If there happens to be a wide discrepancy between the date of the preface and the date of the edition both should be recorded in order to present an accurate picture of the facts relative to the dates.

When no dates are recorded either by author or publisher, the date is located by the facts mentioned or alluded to. It must be clear that the work was written sometime after the most recent event recorded by the author. Frequently the date may be fixed between this most recent event mentioned by him and the next following event of importance which he does not mention but would have mentioned had he known of it.

CHAPTER V

INTERNAL CRITICISM

A. THE DETERMINATION OF THE MEANING AND HONESTY OF THE AUTHOR

Nature of internal criticism [1]

The object of internal criticism is to prepare the way for the final determination of just what in a document may be accepted as true. This type of criticism may be divided conveniently into four fundamental steps: (1) Determination of the literal meaning of the author, (2) determination of his real meaning, (3) determination of his good faith, and (4) determination of his accuracy. After these stages of internal criticism are passed the investigator is ready to proceed to the determination of the actual facts involved.

While all of these stages or parts of the investigation will be carried on more or less simultaneously by the experienced investigator, each kind of investigation carries with it its own particular problems and principles. An investigator should not confuse one problem with the other, and as an aid to a clear separation in his mind as well as because of the greater convenience in treatment, each of these steps will be examined separately and in the manner that the worker would naturally approach his problem.

In the interest of convenience the question involved in the methods of determining the accuracy of an author and of particular facts is reserved for Chapter VI.

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[1] One of the best treatments of this subject is found in Charles V. Langlois and Charles Seignobos, *Introduction to the Study of History* (Henry Holt and Co., New York, 1898), Bk. II, Sec. II, Chaps. VI-VIII. A good analysis also is found in John M. Vincent, *Historical Research* (Henry Holt and Co., New York, 1911), Chaps. XI-XXI. The author is indebted to these writers perhaps above all others for suggestions giving rise to many of the ideas presented in this chapter and Chapter VI.

Determination of the literal meaning of the author

While it may be true that in the great majority of the most modern documents the *literal* meaning of the author will be at the same time his *real* meaning, this is far from being universally true. But whether they are the same or different, the first step that must be taken before the investigator can be certain he has the real meaning is to understand clearly just what the author says.

To determine the literal meaning of a document it is necessary to understand the language of the author; and this means more than just a general understanding of his language. Not only does this involve an understanding of the language of the country in which the author writes, but it involves a knowledge of the language as used in his particular section of the country at the exact time in which he wrote. Language changes radically during short periods of time and between different sections of the same country. Words of common usage in one community are well-nigh meaningless in another at the same time, and in a space of time as short as a decade they pass away and are forgotten even in the community using them. Words often express complex and poorly defined ideas; their meanings are many, relative, and changeable, varying not only from period to period and from community to community, but from author to author. Moreover, words sometimes are used in an arbitrary sense to satisfy some caprice of the author. Hence the utmost care is frequently necessary in utilizing certain kinds of documents. It is the investigator's problem to find out what the *author* said and guard against reading *his own* ideas and interpretations into the words and expressions.

Almost every reader tends unconsciously to read his own particular preconceived ideas and *a priori* notions into the words and sentences he reads. The worker comes to his tasks with certain ideas and his mind is slow to grasp what is contrary to its ideas, with the result that words and sentences in the text are colored and made to yield to the preconceived opinions of the reader. There is always taking place a sort of contest between the reader's opinions and ideas and those expressed in the text by the author, with the result that the reader frequently does not grasp the author's meaning but rather sees a reflection of his own ideas. The danger of reading one's own impressions into texts increases when the author's habits of thought and language begin to differ from those of the investigator who reads after him. Thus when the literal meaning of the text is not obvious beyond the shadow of a doubt the investigator must begin to exercise the greatest care in his interpretations. Doubts will arise in the careful reader's mind when strange words and phrases attract his attention. Certain words and expressions are more subject to change in use and meaning than others and the careful reader will learn to recognize them and be on his guard. Such words and expressions are those denoting changing institutions, customs, usages, classes, and the ready-made expressions.

To make certain that he is grasping the author's meaning of words and phrases the reader must rely upon the context and compare the various uses of these words and phrases in different sentences and paragraphs.

Determination of the real meaning of the author

The next step after determining the literal meaning of the author is to determine his real meaning. They may not be the same for the reason that he may have used expressions in an oblique sense, as allegory, symbolism, jests, hoaxes, allusion, implication, metaphor, hyperbole, or litotes.

It is almost impossible to lay down rules for the detection of the oblique senses. The nature and purpose of most documents are fairly obvious; this fact combined with good judgment on the part of the investigator may be expected to lead to a detection of hoaxes, metaphors, etc. Some documents are written for certain readers who are expected to read between the lines and understand all allusions. The particular public concerned has been trained to grasp the symbolisms and figures of speech. The investigator need not be very keen to detect the peculiarity of such a document, thereby fortifying himself against the confusion of the literal with the real meaning.

Sometimes the author or authors have other interests than that of being understood. Politicians in drawing up platforms and pronouncements designed to catch votes become quite proficient in employing this instrument. It becomes an art to devise sentences that can be interpreted literally to mean two or more things although the real meaning probably is nothing more than that the candidate wishes the votes regardless of the merits of any question involved.

If the literal sense is absurd, obscure, incoherent, or in contradiction with facts known to the author or with ideas commonly attributed to him, the investigator should presume an oblique sense and proceed to study the document carefully in an effort to detect the real meaning from the context of various passages by a careful comparison of those containing the expressions suspected of having an oblique sense.

No person who engages in scholarly work would confuse the real meaning of legends, traditions, myths, and fables with the literal meaning. The kind of critical analysis of sources just described enables the investigator to go back of the literal meaning to the real. It enables him to see and to interpret the world as the author saw and interpreted it. It enables him to see the author's conceptions and philosophies, his images, ideas, and illusions.

Necessity for ascertaining the good faith and accuracy of authors

Ascertaining the real meaning and ideas of an author proves no facts. At the most it yields only probabilities. It does not give of necessity direct information about facts. All it shows is what the author wished to present to the reader. He may have lied, he may have been mistaken, he may have been in no position to observe or secure information of the facts, he may have represented them in an unfair light. The problem facing the investigator is to work his way by careful analysis backwards from the author's presentation to the real facts as they actually occurred. He must visualize, if possible, all the intervening steps that lay between the time the facts originally happened until they were presented by the author of the document. To do this requires his best efforts and most critical judgments.

The natural tendency of the unscholarly is to accept the author's statements with a large degree of trust. This is an attitude of mind that must be corrected. The only proper attitude of mind for the scholar is that of a systematic distrust of everything not proved. All things not proved are presumptions only, and the scholar must guard against the natural tendency of the mind to accept these as facts. Most of us either are mentally lazy or suffer from frequent mental lapses. We tire of being scholarly and critical; we find it comfortable to read without examining too carefully and too minutely all the author says. The usual tendency, without doubt, of the average so-called scholar, is to examine the text closely enough to determine whether the author was contemporary with the events mentioned, whether he was an ocular witness, whether he was and is well informed, and perhaps above all, whether he appears to be telling the truth. The accent of sincerity makes a strong impression on many people and leads them to bestow almost instinctively their confidence and approval upon the author's work. They tend to forget doubts and are not awakened until confronted by conflicting statements. Yet such an attitude of mind is not scholarly and the investigator must become far more critical in his methods if he is to consider his work truly scholarly.

The scholar adopts a systematic distrust for everything not proved; he does not wait until his attention is attracted by conflicting statements; he does not attempt to judge the author's entire work at once, nor is he impressed by the fact that the author is generally reliable and trustworthy. Instead he examines each independent statement of the author, treating each statement as a mere presumption and doubting it until proved to his satisfaction. In general, he will endeavor (1) to learn all possible concerning the habits, sentiments, training, methods, and personal bias of the author—in a word, his good faith—and (2) to learn the circumstances that would determine his degree of accuracy. Each of these problems will be examined separately.

In appraising the good faith or honesty of an author we are concerned primarily with the willful distortion of facts. This may show itself in any form varying from malicious lies to rather mild misstatements growing out of various prejudices and biases. At times it is difficult to determine whether misrepresentations and distortions of the latter character are willful or more or less unconscious. In any case, we are concerned with willful distortions of facts in our study of the good faith of the author. The distortions of truth which are due to other factors than conscious misrepresentation are reserved for that part of Chapter VI devoted to the methods of determining the accuracy of the author. It is recognized, of course, that it is difficult at times to draw the line between the conscious and the unconscious distortion of facts.

Criticizing the good faith or honesty of an author

The questions that a critical scholar will raise concerning the good faith or honesty of an author are as numerous as the characteristics of human beings. Few scholarly investigators would require guidance in this matter; the uninitiated will secure considerable aid by having some of the most outstanding considerations brought to his attention.[2]

Why did the author write the document?

The first and most important question to be raised and answered if possible is, Why did the author write this document? The answers may be many; they are determined by the ideals, training, and character of the author. He may be endeavoring to make a scholarly contribution to a field of knowledge in which his chief interests lie. On the other hand, he may not be searching for truth at all but may be serving the interests of some group, some class, or himself. Such material is usually nothing more than biased propaganda. It may show evidence of great ability in research but after all it is thoroughly unscholarly since it does not represent an impartial search for truth regardless of any interests that may be affected or any unpleasant consequences that may follow. It is very easy for a writer to view certain subjects with sympathy or antipathy and it is one of the first and most important duties of the critical scholar to free himself from such a position. If he is writing of friends it is more difficult to point out facts unfavorable to them than it is if he is writing of his enemies.

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[2] See also J. Eigelberner, *Investigation of Business Problems* (A. W. Shaw Co., 1926), Chap. V, "The Proper Mental Attitude"; and George A. Lundberg, *Social Research* (Longmans, Green and Co., New York, 1929), Chap. II, "The Difficulties of Objective Observation of Social Phenomena" and Chap. IX, "The Measurement of Attitudes."

The prejudiced writer is usually profuse in his protestations of impartiality

The prejudiced writer almost invariably becomes profuse in his protestations of impartiality. One sees these very often in prefaces to works. The question naturally arises: Why all these forewarnings as to absolute fairness? Either the writer wishes to disarm criticism because he knows he is not impartial, or he has given very little thought to the psychology of such things. In either case there could hardly be a better warning to the reader to be on his guard and to become suspicious than a writer's insistence upon his impartiality. Such prefaces suggest that the writer is on the defensive. The true scholar assumes impartiality and does not think it necessary to tell the reader about his ethics. He knows, moreover, that such protestations and announcements would have no effect upon the critical reader except to arouse his suspicions to the highest point. The general and uncritical reader, however, seems easily impressed with all these asseverations of sincerity and is led to bestow his approval upon the writer almost unconsciously. The critical scholar, however, is not tricked or disarmed by any type of preface, any accent of sincerity, or even by the lack of such ill-advised forewarnings; he judges for himself.

Moreover, and as Vincent so ably points out, ". . . the most honest intentions of fairness are subject to the unconscious influences of circumstances. Consequently, a man's own estimate of his exactitude may not be correct."[3] Protestations of impartiality, he points out, have no value since these have been attached to the most impudent misrepresentations of fact.[4] And admissions of facts disadvantageous to the author himself may be nothing more than bulwarks to fortify other important misstatements. Facts must be sought regardless of the reputations of writers.

Does the writer show a distortion of facts resulting from vanity?

Another question of importance is whether the author is impelled by vanity, private or collective, to show some kind of

[3] Vincent, *op. cit.*, p. 131.

[4] *Ibid.*

distortion. Most of them are almost certain to make statements designed to give the reader the impression that they possess certain qualities which deserve respect. The difficulties to be overcome in attempting to analyze a writer's particular type of vanity in order to discover if possible why he makes certain statements are in not confusing one's own vanity with that of the author. People are vain for widely different reasons. A certain rich man boasted of having a suit of clothes twenty-five years old; the usual type of vanity would lead one to boast of the number and variety of his suits of clothes. Others are found to boast of deeds that are considered highly dishonorable by the average person. Brief reflection will convince the reader of the danger of attempting to appraise every one's vanities according to any fixed standard. The scholar will always study carefully the character, environment, and bias of the author in an effort to determine as accurately as possible the kind of vanity with which he is afflicted. His statements then are judged and weighed accordingly.

Whatever the particular kind of vanity that seems to characterize a writer, there is one particular brand that seems well-nigh universal and that is the desire to show one's superiority over one's fellow men. With most writers this shows itself in a tendency to exalt themselves and the group or party represented. Most writers contrive to leave a definite impression of the very important part played in the affairs of men by themselves and their group. It is probably safe to say that most writers and their works are not as important as they would have one believe. The scholar will not be misled by any such display of vanity. Wholesome criticism and appraisal are necessary to establish the relative importance of any writer and his work.

Was the writer placed in a position which would invite him to deviate from the truth?

Reports issued by army staffs, for example, relative to losses, movements of troops, supplies, resources, etc., may be issued with the idea of deceiving not only the enemy but the general and friendly public.[5] Circumstances frequently seem to justify false reports. Other types of reports often embody many violations of the strict truth. As an example, reporters for papers frequently are handed lists of persons invited to be present at certain functions and these are published sometime later as a record of those actually present, while, as a matter of fact, any number of those invited may not have been present. Such petty fictions are common. Sometimes they become matters of great importance. Many reports of a similar nature appear due to the fact, perhaps, that contents are of such little importance that the extra effort required for verification seems hardly justifiable. But the scholar must be thoroughly aware of such practices and always verify such material if of any importance at all.

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[5] See especially Harold D. Lasswell, *Propaganda Technique in the World War* (Alfred A. Knopf, New York, 1927), *passim.*

Does the desire for promotion cause him to write to please his superiors?

Desire for promotion often causes subordinates to write in a manner favorable to their superiors. It is usually important to know the lines of promotion that lie open before the author. Many writers, with an undeveloped type of scholarship, reveal the fact that they believe that "flattery of superiors is the key to advancement" and are seeking to take advantage of it.[6]

Does he have a religious or theological bias?

Religious opinions often divide writers into distinct groups and evidence of bias is only too common, unfortunately, in the writings of many of the so-called scholars who are easily placed in certain groups. Religious opinions sometimes give writers a bias without their full realization of it. Too many forget that religious opinions, as pointed out by Vincent, ". . . in the majority of cases are received either by education or by inheritance. Only in exceptional instances are beliefs obtained by independent thought." [7]

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[6] See Vincent, *op. cit.*, pp. 122-132, for a discussion of the various personal qualities of writers which should be scrutinized carefully.

[7] *Op. cit.*, p. 129. The reader will find an interesting "exceptional instance" revealed by Walter Lippmann in his *A Preface to Morals* (The Macmillan Co., New York, 1929).

For an excellent discussion of religious and theological bias, see Herbert Spencer, *The Study of Sociology*, The International Scientific Series (Kegan Paul, Trench and Co., London, 1887), Vol. V, Chap. XII. The writer owes a particular debt to Spencer in the discussion of biases. Probably no one has discussed biases better than has Spencer. In fact, his treatment is a classic. See also William F. Ogburn, "Bias, Psycho-analysis, and the Subjective in Rela-

That a theological and religious bias results in misrepresentation of social facts should be clear to all who have given the question any thought. Each system of dogmatic theology, with the sentiments that gather round it, becomes an impediment to proper thinking in the social sciences. Sympathies and antipathies toward creeds distort one's outlook and result in perversions of opinion. One looks for the good in those creeds with which one sympathizes and can see quite easily the defects in those toward which one feels an antipathy. Born to a certain creed, it requires a special effort and considerable training to rise above it or to discard it in favor of another. Without the development of such independence, perspective, and liberalism, a pronounced bias will show itself. Where such bias exists, deeds and habits and laws are not judged by the degrees in which they conduce to temporal welfare. Rather, says Spencer, ". . . the wrongness of conduct is conceived as consisting in the implied disobedience to the supposed commands, and not as consisting in its intrinsic character as causing suffering to others or to self. Inevitably the effect on sociological thinking is, that institutions and actions are judged more by their apparent congruity or incongruity with the established cult, than by their tendencies to further or to hinder well-being." [8] Spencer illustrates this point forcibly by pointing to the mental attitude, so often seen, that devotes itself with every insistence to the details of a creedal piety, but at the same time supports warfare, admires warriors, would have mobs shot down, and revels in the narratives of destruction. In the words of Harold Lasswell: "The churches of practically every description can be relied upon to bless a popular war, and to see in it an opportunity for the triumph of whatever godly design they choose to further. Some care must, of course, be exercised to facilitate the transition from the condemnation of wars in general, which is a tra-

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tion to the Social Sciences," *Publications of the American Sociological Society* (1922), Vol. XVII, pp. 62-74.

For a compact survey of the interpretation of religion by leading sociologists of different schools of thought see Floyd N. House, *The Range of Social Theory* (Henry Holt and Co., New York, 1929), Chap. XVIII on the "Sociology of Religion." See also his Chap. XIX on "Religion and Morals." Professor House's book will guide the reader to many valuable sources for wider reading.

[8] Spencer, *op. cit.*, pp. 295-296.

ditional attitude on the part of the Christian sects, to the praise of a particular war. This may be expedited by securing suitable interpretations of the war very early in the conflict by conspicuous clericals; the lesser lights will twinkle after."[9] With the strictest of sectarians it frequently happens that ". . . social arrangements essentially at variance with the ethics of the creed, give no offence to those who are profoundly offended by whatever seems at variance with its theology. Maintenance of the dogmas and forms of the religion becomes the primary, all-essential thing; and the secondary thing, often sacrificed, is the securing of those relations among men which the spirit of the religion requires."[10] The scholar must recognize that many individuals are guilty of such a bias and inconsistency, and that while they may conform to moral principles from motives of obedience, it does not follow at all that they will insist on such principles because of their real social value. Such persons frequently feel no offense in social arrangements directly at variance with the ethics of their creeds. Unbending supporters of certain creeds cannot or will not see their relative value or position among others and cannot interpret facts connected with them in a scientific manner.

It must not be forgotten also that there are many who have a pronounced anti-theological bias.[11] While such persons may pride themselves on the fact that they are broader than any creed and have no such bias, they may be guilty of a worse one. They may be anti-everything in so far as religions are concerned and consequently unable or unwilling to see anything good in any creed simply because it is a creed and therefore, in their opinion, necessarily bad. Vital movements making for social good may be overlooked due to the general antipathy toward anything smacking of a religious creed. It should be understood without further elucidation that there is no more of a scientific attitude in this type of bias than in the theological bias mentioned above. Anti-religious fanaticism is sometimes as pronounced as a religious fanaticism. Many of those with the anti-religious bias fail to understand that a religious man may be truly scientific and that he may have developed a conception of the universe beyond the comprehension of the anti-religionist.[12] But such men do not confuse their conceptions of the universe and immortality which impress them as rational with facts demonstrable in the scientific fields. Rather they are quite willing to acknowledge that they rest upon hope and faith which have come to occupy a rationalized place in their methods of thinking. Anti-religionists often fail to understand such persons just as they fail to see that a religious system appears to be a normal factor in the evolution of every society. The scientific mind is not a monopoly of any group, sect, or individual.[13]

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[9] Lasswell, *op. cit.*, p. 73. He also points out (p. 75) "that certain American educators took advantage of the War to gather steam behind their pet objects of educational reform." One is reminded also of the various scholarly men who were ousted summarily from public schools and universities because they could not develop an insane hatred toward the German people, or perhaps because their names were too strikingly German, all of which is a pitiful commentary upon a people's intelligence in war times.

[10] Spencer, *op. cit.*, pp. 297-298.

[11] E. Haldeman-Julius, for example, says that the essence of religion is supernaturalism. "Religion is not idealism. It is not humanitarianism. It is not even a feeling of wonder and poetic sensitiveness toward life. These things may influence the religious man—we know how widely subject the human mind is to different influences—but his religion, as a distinctive attitude of mind, can only be defined as supernaturalism." E. Haldeman-Julius, *The Outline of Bunk* (The Stratford Co., Boston, 1929), pp. 20-21. The caption of Chapter II of this book is "In Religion—Supreme Bunk of History—We See How Bunk Has Thriven Upon the Ignorance of Man." In another place Mr. Haldeman-Julius states his position as follows: "Where man is still religious today, it means that, in this respect, he is so much the less intelligent and out of step with progress. . . . It is not the amount of religion that he retains, but the amount of religion that he has discarded, which proves his relatively greater intelligence." *Ibid.*, pp. 22-23.

Does the author have a political bias?

In a similar manner a political bias will result in a distortion of facts and reflect itself in the fundamental good faith of the author.[14] Political bias is so well understood that an attempt to point out warnings to a scholar seems unwarranted. Nevertheless a few words may be directed to the beginner, even though political platforms, speeches, and journals are all so clearly biased that even the most uninitiated scholar could hardly fail to be on his guard. The really amazing thing about it all is the fact that politicians will continue to play the game with such seriousness and with the apparent belief that the masses are really gullible enough to take their childishness seriously. Place a scholarly man in the midst of such an atmosphere and he speedily becomes an outstanding character by virtue of the contrast, and he either rises rapidly to the top or is submerged through some political move designed to render him ineffective. Political systems and organizations are so constituted that the man who will not permit himself to be controlled, temporarily at least, in the interests of expediency, has a stormy career ahead of him. It is a well-nigh all-pervading philosophy that a man must "play along" with the organization and that it is only the foolish, the stiff-necked, and the inexperienced who do not. Since most men are conformists the statements of most public men are characterized by a bias. Any scholar will understand that the interests of a professional body of politicians are not identical with the interests of the public.

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[12] See for example Harry Emerson Fosdick, "What Is Religion?" *Harpers Magazine* (March, 1929) and his "What Is Christianity?" *Harpers Magazine* (April, 1929); also Ralph Waldo Emerson, "The Over Soul," *Emerson's Essays and Poems* (Charles Scribner's Sons, New York, 1926), pp. 146-161.

[13] Mr. Haldeman-Julius says: "At best, immortality is a pathetic, vain dream of reuniting with loved ones after death." *Op. cit.*, p. 27. In this statement Mr. Haldeman-Julius convicts himself of the very things that he condemns in others. When he says immortality is a *vain* dream he assumes the position of *knowing* and of course has ceased to occupy a scientific position. He has no better basis for insisting that it is a vain dream than others have for insisting that it is not a vain dream. His chapter, like several of his others, nevertheless contains many valuable thoughts. For a further discussion of this subject see pp. 133-137 below.

[14] See Spencer, *op. cit.*, Chap. XI.

Political bias tends to foster an undue faith in political forms. This is seen in the innate virtues assumed to exist in certain constitutions, in the pronounced ideas that the constitutions of our Fathers are sacred instruments that cannot be improved and that to change them is almost certain to lead to retrogression. Yet any competent observer understands that their value is entirely conditional upon national character in given periods, as repeated occurrences should demonstrate. The value of any instrumentality of government is determined by the degree to which the fundamental end desired is achieved; there is nothing sacred about the agency itself.

While there is the political bias due to excess faith in constitutions, laws, forms, and procedure, and to a general awe of regulative agencies, there is another type of political bias seen in those who, by temperament, seem opposed to everything in the existing order and who always stand ready with a criticism, often superficial, of everything political which does not suit their fancy and of which they probably have very little reliable information. The pages of the press and certain popular magazines are cluttered up with the fulminations, tirades, cynicisms, and jibes of these would-be reformers who write and talk so much but really know so little. To many of them nothing is worth careful preservation, whether it be the Constitution, the court, the church, the school, or the family. Standards and institutions, which have slowly matured through the ages and are seasoned as a result of generations of testing, would be cast aside over night. A highly developed egotism usually accompanies this type of bias which is not only amusing, but has a distinct virtue since it is such a valuable aid in appraising and marking the man for what he is. Neither type of bias should disconcert or mislead the scholar but their presence behooves him to develop a seasoned perspective which will enable him to weigh them and detect their real value.

Does the author have a class bias?

"The egoism of individuals leads to an egoism of the class they form; and besides the separate efforts, generates a joint effort to get an undue share of the aggregate proceeds of social activity."[15] Each class, group, or clique develops its own self-asserting and self-preserving tendencies and practices. Each class tends to see all social arrangements through its own eyes and is unable to look at the social organism in an unbiased manner. Class interests and bias manifest themselves in almost every conceivable form. There are the rich and the poor, the capitalist and the laborer, the governing and the governed, the schooled and the unschooled, the educated and the uneducated, the liberals, conservatives, and radicals, the religious sects, the professions, the trades, the pros and the antis *ad infinitum.*

When class bias develops rationalism disappears, the truly scientific attitude is impossible, and a rationality in social and political thinking cannot be expected. The bitterness and intolerance of class hatred has shown itself recently in this country in the notorious and scandalous hooded orders which have appointed themselves guardians of the social order as they think it should be. They defy the most elementary and fundamental principles of right and liberty as guaranteed in our constitutions and at the same time insist upon their hundred per cent patriotism. A more vicious type of class bias could hardly be found in modern times. With such an amazing lesson of perverted class prejudice before us it should not be difficult to impress upon the would-be scholar the necessity of looking for class bias in some form in connection with practically every activity with which he comes in contact. His task is to detect, measure, appraise, and discount it. Bias is detected in every party journal and in most conversations.

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[15] Spencer, *op. cit.*, p. 242. See his entire Chapter X on this subject.

Errors of judgment probably are greatest where persons rather than things or institutions are the objects with which pleasures and pains are associated. In the various social antagonisms there is a tendency to hold prominent persons responsible for the system of which they may be a part. A statesman is applauded or overthrown for things which the system does and which may be beyond his control. An individual, through a combination of circumstances operating within the system of which he is a part and over which he has little if any control, frequently finds himself riding the wave of popularity because he has given society, perhaps unintentionally, an unexpected pleasure. There is almost a universal tendency to attach blame or praise to individuals rather than to systems. Employees blame individual employers for their unhappiness and yet when one of their members becomes the employer they may find him even more unsatisfactory. They fail to realize that it may be the system rather than the individual. A scholar must look beyond the individual to the factors controlling him.

As social stratification changes and a class, hitherto powerful, finds itself being submerged, it requires a great effort for any member of that class to observe the change in an objective manner or to concede the desirability of the change even though in the interests of social progress. Army and navy men keep fighting for greater armament even though a social system without it might be infinitely better and permit individuals to call their lives their own. Yet one rarely sees military men work strenuously for a social order characterized by more rational methods of settling disputes.

With social stratification, standards of conduct and of honor are set up appropriate to the different classes and are a manifestation of the bias appropriate to each class. The theories by which the rich, for example, seek to promote and to justify their practices and conventions are highly developed, just as are those of other social groups who condemn the rich while at the same time secretly envying them.[16] The social philosophies of groups are usually determined by the needs, desires, and necessities of the respective groups and these, the scholar will understand, are purely relative and change from generation to generation. For these reasons it is imperative that the scholar develop the proper perspective in his appraisal of facts and philosophies applying to classes. He must appreciate that the various defects which he thinks he sees in the different class groups are mainly defects of a human nature quite similar to his own but working under different conditions.

Does the author labor under a bias of exaggerated patriotism?

Any scientifically minded person would be compelled to agree with Herbert Spencer who said, regarding the person that maintains such sentiments as "Our country, right or wrong," that ". . . whoever entertains such a sentiment has not that equilibrium of feeling required for dealing scientifically with social phenomena. To see how things stand, apart from personal and national interests, is essential before there can be reached those balanced judgments respecting the course of human affairs in general. . . ."[17]

For the would-be scholar to emancipate himself from this bias is extremely difficult, partly because the very nature of the body politic coerces him in many respects. "In his capacity of inquirer, he should have no inclination towards one or other conclusion respecting the phenomena to be generalized; but in his capacity of citizen, helped to live by the life of his society, imbedded in its structures, sharing in its activities, breathing its atmosphere of thought and sentiment, he is partially coerced into such views as favour harmonious co-operation with his fellow-citizens. Hence immense obstacles to the Social Science, unparalleled by those standing in the way of any other science." [18]

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[16] See Thorstein B. Veblen, *The Theory of the Leisure Class* (B. W. Huebsch, New York, 1919), *passim.*

[17] Spencer, *op. cit.*, p. 204. See his Chapter IX on this species of bias.

Extreme nationalists could profit by reading the penetrating remarks of Spencer. "Patriotism," he says, "is nationally that which egoism is individually—has, in fact, the same root; and along with kindred benefits brings kindred evils." [19] In another place he remarks that ". . . it becomes clear that events which, looked at from an unnational point of view, were steps towards a higher life, seemed from a national point of view entirely evil. . . . We must admit that only in proportion as we emancipate ourselves from the bias of patriotism, and consider our own society as one among many, having their histories and their futures, and some of them, perhaps, having better claims than we have to the inheritance of the Earth—only in proportion as we do this shall we recognize those sociological truths which have nothing to do with particular nations or particular races." [20]

He says further: "This ideal does not call for an under evaluation of national capacities or institutions, nor does it call for such a high degree of passivity as to invite aggression on the part of other nations; it merely calls for a scrutiny of national affairs with a proper international perspective. It is an indictment of that disproportionate patriotism which is certain to vitiate one's conclusions respecting the natures and actions of other societies. A man who recognizes his own errors of conduct and his own deficiencies of faculty, shows a trait of character considered praiseworthy; but to admit that our doings towards other nations have been wrong is reprobated as unpatriotic." [21] These things are so generally understood as to require no proof.

This patriotic bias shows itself in many ways: We may find ourselves underestimated by those we underestimate; distorted beliefs concerning conspicuous persons are extended to the people they represent; feelings and deeds in our own interests are virtuous but when they come from others and are inimical to our interests then they are looked upon as vicious; we judge unfairly the institutions of a people held in contempt.

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[18] *Ibid.*, pp. 386-387.

[19] *Ibid.*, p. 205.

[20] *Ibid.*, pp. 204-205.

[21] *Ibid.*, p. 206.

Perhaps equally deplorable and responsible for an undesirable bias is an anti-patriotism and an undue self-depreciation. Such an attitude may be an affectation, an attempt to show a certain brand of superiority, or a reaction resulting from the attempt to rise above the bias of patriotism. The only solution is to strive with all our abilities to rise above this bias and, in so far as we fail, leave the elimination of the resulting errors to future appraisals which may be more objective.

Is the author expressing sentiments to please the public?

Most authors know what kind of information the public wishes, and many, wishing to secure its good will and approval, distort the actual facts to suit the prevailing thought and prejudices. Writers of popular fiction consider this procedure one of the most fundamental prerequisites to success. The writer who best sets forth what the public wishes to read is assured a successful career. But writers in other fields, where only cold facts should be set forth, are prone to color and distort unpleasant facts in order not to offend if not to please. One sees most clearly such distortion of facts in set speeches—political speeches for example —in ceremonial forms, in artificial etiquette. Surely we would not look to the assurances of respect with which letters are ended as an indication of the writer's real sentiments, nor at the epitaphs on tombstones for an idea of the real esteem with which the departed was regarded. Yet we are inclined to forget these violations of truths when engaging in research work. The critical scholar will always protect himself against these more or less conventional violations of truth by attempting to determine the character of the particular public for whom these sentiments are expressed and by analyzing the tastes, opinions, and prejudices of this public.

Has the author violated the truth through the use of literary artifices?

Another question to be raised is whether the author has violated the truth through literary artifices and craft. Some writers embellish and exaggerate according to some notion of what is important or æsthetic. By rhetorical distortion they attribute sentiments, acts, attitudes, and even words to persons concerning which they could have secured, under no circumstances, such exact knowledge. While this is a prevailing practice in fiction it is altogether too common in the more sober fields of work. Some writers who attempt to produce a scientific work should confine themselves entirely to fiction. They cannot resist their tendencies to embellish and color facts and to read their own fancies into the acts of others. They feel that pure, unadorned facts are uninteresting and ugly. They confuse the value of literary artistries in certain types of writings with the value of exact truth in scientific fields. This is not to say that beautiful language, an excellent choice of words, and correct sentence structure are not to be cultivated in careful, scholarly writing. Quite the opposite is true. Henry Van Dyke was right when he said, "Read no book with which the author has not taken pains enough to write it in a clear, sound, lucid style. Life is short. If he thought so little of his work that he left it in the rough, it is not likely to be worth your pains in reading it."[22] Poor writing is to be condemned wherever found. But adornment usually defeats accuracy. Adjectives and adverbs are uncertain if not dangerous instruments in scholarly works calling for the utmost care in their use. It is a good rule to omit every adjective and adverb that is not absolutely necessary to convey the complete and exact sense. It is difficult not to trust writers when it is recognized that they have great literary talents; it also is easier to accept statements couched in good literary form. But it is probably a good rule which insists that the more interesting a statement is from the artistic point of view, the more it ought to be suspected.

Lyric distortion, in which the writer exaggerates the intensity of the emotions of himself or his group, is quite common. It is a good rule to distrust a writer's account not only of his emotions and sentiments but especially those of his group. In a truly scientific work there is no room for the display of emotions regardless of the form they may assume.

Closely related is epic distortion in which the writer, carried along in his grand style, adds picturesque details. Words are put into people's mouths, the utmost detail is given as to acts, time, and numbers, all of which gives an impression of the utmost precision and truth to the uninitiated. The psychology of this practice is simple. It is the common practice of the deceiver as well as of those who are beginning the practice of the art of composition. It also is revealed in the growing imaginations of children. But these very details are the undoing of the author. They are nothing but a red flag attracting the attention of the critical reader or listener. The kind of writing, sometimes called "truer than the truth," is not difficult to detect and is easily recognized by the critical scholar.

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[22] *Counsel upon the Reading of Books, With an Introduction by Henry Van Dyke* (Houghton Mifflin Co., New York, 1900), pp. 21-22.

The scholar should know psychology

It is clear that the scholar cannot know too much psychology in attempting to analyze the honesty or good faith of an author.[23] The wider the critic's knowledge of human nature, the better qualified is he to determine accurately the true character of an author. The critic not only seeks to detect all trickery but at the same time endeavors to appraise the author with the utmost fairness. The critic must scrutinize and watch himself carefully when engaging in such analysis, else he may be guilty of the very things which he thinks he is convicting the author of doing.

It should not be necessary to state that an inquiry into the good faith of an author is for the sole purpose of finding out facts, not to approve or to damage the character of the author. In the attempt to reach the truth many valuable facts may be secured from writers with a poor methodology, and it should be remembered also that writers with a remarkable reputation sometimes are guilty of errors if not of bias. Investigators should beware of fixed notions of the characters with which he deals; individuals are not always consistent in their behavior. The critical scholar deals with individual statements of each type of writer and weighs each for what it is worth.

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[23] On this subject see Dr. Howard K. Nixon, *The Psychology of the Writer* (Harper and Brothers Publishers, New York, 1928).

CHAPTER VI

INTERNAL CRITICISM (*Continued*)

B. EXAMINING THE ACCURACY OF THE AUTHOR

Criticizing the accuracy of the author

A writer's honesty may be beyond question and yet he may be inaccurate in his work. Therefore, regardless of the question of his good faith, several important questions concerning his accuracy must be raised and answered. At the same time it must be recognized that it is not always possible to separate an examination of the accuracy of an author from an examination of his honesty. Willful falsehoods, prejudices, and biases, like many other factors of which the author may be unaware, all alter and color the truth in varying ways and degrees. In the present inquiry into the proper methods of determining his accuracy we shall concern ourselves with causes contributing to an author's inaccuracies other than willful falsehood and the common biases treated in the preceding chapter. In brief, we are concerned with the factors that cause the writer to make inaccurate statements *unconsciously*. We shall consider (1) cases in which the author was the observer, and (2) cases in which he was not the observer.

Was the author in a position to observe the facts directly?

If the author were so placed that he could observe the facts directly and if he reported his observations carefully, we have the very best kind of indirect information and source material with which to work; we have in our possession primary source material if in the fields of the social sciences. Only one kind of observation could be better and that is direct observation by ourselves.

Sometimes, however, writers state facts which they could have observed directly but did not, due to lack of interest, negligence, or laziness. Much that they report is merely inference and the result of the imagination. This is often the case where the author has little interest in the subject on which he is reporting. In this class also would fall the reports made on public functions and ceremonies, where the reports are frequently made in accordance with some customary procedure or the prearranged programs. It is a good rule to distrust all narratives conforming too closely to set formulæ.

It is quite common to find writers reporting on what happened in secret councils when they did not have access to the actual deliberations. Subordinates frequently undertake to give an account of such secret councils from which they were excluded partially or entirely and regarding which their seeing and hearing would be very defective. Writers also attempt to report facts when an analysis of their situations at the time shows that they could not have observed carefully. They may have been entirely occupied by the necessity for action; they may have been in the midst of some thrilling experience which would distract their attention from other things on which they later seek to report.

Was the author a good observer?

Some authors are good observers while others are extremely unreliable. It is a well-recognized fact that different persons observing any phenomenon do not see and report the same things. Each person looks through eyes which see according to that person's training, environmental influences, prejudices, interests, and knowledge. When one considers that conflicting testimony is almost as common as the events reported, it seems remarkable that so much confidence is placed in the testimony of a single individual. Conflicting testimony often makes it impossible to learn with certainty what actually happens at any given time or place.

Nor can the truth be ascertained by piecing together what the majority may report. A single expert witness may report more accurately than several inexpert observers. Professor Allen Johnson, in reviewing the testimony given by the reporters of the Wall Street bomb explosion of September 16, 1920, pointed out that eight of these reported that there were a number of vehicles in the block, while three testified positively that a red motor-truck carried the bomb. Only one person, a retired army officer, a man trained to observe correctly, testified that the explosion occurred upon a small horse-drawn truck and that there was only one other vehicle in sight, a motor car. The testimony of this expert observer was proved correct.[1]

While it is well known that the untrained are notoriously poor observers, it is not safe to assume, unfortunately, that all scientists are always correct in their observations. Professor Johnson records an account of an experiment made upon a group of scientists which demonstrated this fact.[2] A meeting of a scientific association in Göttingen was interrupted according to a carefully laid plan, and in their reports of the episode, the members, composed of jurists, psychologists, and physicians, were unable to give an accurate account of what transpired. More than half of these scientific men, trained in habits of scientific observation, omitted or stated inaccurately fifty per cent of the happenings which occurred directly before them.

Only a careful study of psychology can yield the explanations as to why the various observers of an episode will see, hear, perceive, and report different things concerning the same happening, and even the psychologist has much to learn. Errors in reporting an episode may be due to a poor memory, or to certain deflecting influences even though the memory be excellent. It is generally recognized that memory is selective and discriminative, that we remember what interests us, and that a fundamental characteristic of memory is one of fancy and imagination rather than of accurate recollection.[3]

Professor Johnson insists quite correctly that far too little stress has been laid upon the probable apperceptive powers of historical witnesses and the conditions under which they exercised them.[4] It has been the habit in the past to lay most of the stress upon their honesty and good faith. Errors may be due to numerous factors comprehended in the complex processes of perception. What one sees and hears is determined in a large measure by what one has previously learned to see and hear. Various kinds of experiments have demonstrated the power of suggestion; one sees and hears what he expects to see and hear. Magicians, tricksters, and the cinema have taken advantage of these facts. A call upon the attention in one direction prevents its concentration in another. Human vision is relatively slow and there is a tendency to interpolate objects according to expectations drawn from individual or group experience. The peculiarities of vision have been demonstrated through experiments to be such as to make it unsafe to rely upon testimony relating to size and distance of objects. Atmospheric and light conditions are known to affect vision in certain ways. Similarly, not only are there great differences in the sense of hearing of individuals, but it is recognized that there are many peculiarities in the perception of the direction of sound. Perceptions of time are well known to be deceptive: "Consciousness of time is in proportion to our interest and absorption in the occupation of the moment." [5] Imagination and fancy affect the most prosaic of men. Some are subtly conscious of their audience and tend to become somewhat dramatic. After a lapse of time "everyone will find in his own experience ample corroboration of the vagaries of memory." [6]

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[1] Allen Johnson, *The Historian and Historical Evidence* (Scribner's, New York, 1926), pp. 24-25.

[2] *Op. cit.*, p. 36.

[3] See Johnson, *op. cit.*, p. 37.

[4] *Op. cit.*, p. 26.

If a lawyer, a physician, and a mortician witness an accident, each one might see and report the facts differently. The lawyer probably would observe the sequence of events in order to establish, if possible, the responsibility for the accident since he is likely to think and see in terms of lawsuits. The physician would be thinking of and seeing mutilated forms and broken bones, and would visualize, in the terms of his particular science, how to help and how to revive the victims. The undertaker, with his eye on the victim, would look carefully to see if the accident was fatal to him. These three observers would not report the facts in the same manner for they did not see through the same eyes. An observer's view may be so peculiar, or narrow, that the most important facts are not seen at all.

While professional interests and training may cause variations in observations in some cases, lack of careful method in observation also explains great discrepancies in observation. Two physicians witnessing an accident probably would see facts differently. Some individuals are subject to illusions and hallucinations and it frequently is difficult, if not impossible, to determine this fact when analyzing an author's work. To establish this fact with certainty requires an intimate knowledge of the author, and this can be secured only through personal contact or a most careful, prolonged, and comparative study of his works. Usually this is not done. It may be fairly easy to determine whether an author is controlled by prejudice, but it is often impossible to determine whether he is subject to hallucinations or illusions. The critic, in the course of the average type of investigation, does the best he can with the particular work in hand, trusting that he may discover any tendencies to error which the author may have. The scholar will observe carefully, however, to see if the writer's training, interests, preconceived ideas, and propensities do not show themselves in his report, and will appraise and discount them accordingly.

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[5] Johnson, *op. cit.*, p. 34.

[6] *Ibid.*, pp. 38-39. On this subject it is suggested that the student read Johnson, *op. cit.*, Chap. II on "The Basis of Historical Doubt."

When did the author record his observations?

Even though the author was in a position to observe facts directly and correctly and was a good observer, if he did not record his observations until later, this fact in itself makes it possible for many errors to creep in. The thoroughly trained direct observer will record his observations immediately in a most precise manner and indicate as precisely as possible his method of observation and recording. This is one of the most elementary principles followed by the chemist or physicist in his laboratory, but is rarely observed by investigators in the social sciences. For this reason the documents found in the social science fields are not as reliable sources of information as the documents recording observations in the laboratories of the exact sciences or the direct observations made by the investigator himself of which an immediate record is made.

An observation or impression recorded some time later is only a recollection. Memories are not reliable. Any recollection may be confused in the memory with other recollections, depending, of course, upon the time that has elapsed since the direct observation. For this reason memoirs written several years after the facts, especially when not written from diaries, are likely to include many errors. While it is common to look upon memoirs as very valuable sources of information, they should be treated with special distrust and a careful study should be made of the methods used in recording the data. And aside from the question of the method of recording the data, it should be borne in mind that memoirs are about the most unreliable of all historical records. The entire list of human motives may need to be examined to determine the chief purpose of the writer. Furthermore, the state of mind of the writer at every stage of the writing should be understood in order to evaluate the memoir properly.

While it is quite common to look upon memoirs written from diaries as quite superior to other types of memoirs, even these must be subjected to effective criticism due to the nature of diaries. Mr. Arthur Ponsonby in his criticism of the value of introspective diaries says: "Although the honesty and sincerity of the introspective writers may be beyond question, they do not necessarily by their method give a faithful picture of themselves. . . . We think we know ourselves better than others know us. But the truth is we only know the inside half, and it is doubtful whether any human being in varying moods can describe even that accurately. Moreover, the little shop window we dress and expose to view is by no means all that others see of us. We may be very self-conscious about things which others hardly notice, and throughout our lives we may be entirely unaware of some glaring peculiarity which continually strikes our neighbors. A pelican is not the least self-conscious about the size of his beak. A peacock may be self-conscious about his tail; but he thinks, too, that he has a beautiful voice. On the other hand, outsiders may believe that some person is quite oblivious of certain failings till it is discovered by his diary that he had been struggling with them all along.

"We have said that the honesty and sincerity of indiscreet and unreticent writers may be beyond question. This perhaps requires some qualification. Self-deception is very prevalent. There is a good deal of truth in Byron's remark in his diary, 'I fear one lies more to one's self than to any one else'; or as Gladstone puts it, 'I do not enter on interior matters. It is so easy to write, but to write honestly nearly impossible.' "[7]

Is the fact of such a nature that it could not be learned by observation alone?

Many statements are made and judgments rendered concerning the actions of large groups of people, events covering long periods of time or data applicable to extensive areas. These comprehensive judgments are arrived at indirectly. An author may begin from data furnished by direct observation but he elaborates these data through abstraction, generalization, reasoning, and calculation. Certain questions relative to such procedure must be raised as indispensable precautions in dealing with large totals in statistics and with many of the descriptions in popular usage: Did the author have sufficient data upon which to work in these cases? Was he accurate in the use of the data he had? Was he able to procure the necessary data to justify his statements? Conjectural valuations are common, as, for example, in giving the number of combatants or the number killed in battle, when it is impossible to secure exact data, or in combining subsidiary totals, all of which are inaccurate. The value of such statements by authors depends upon whether they had sufficient data upon which to work and whether they were capable of logical reasoning, abstraction, and generalization; whether they had the experience and intelligence necessary to an understanding of the facts; and whether they analyzed their impressions well or badly. In order to determine the value of the data, each statement must be criticized separately.

The case may be one of hidden facts, mystery, or a private secret. In such an instance the question again is whether the author had sufficient data on which to work. And did he use accurately the available data? In some of our daily papers (the sensational or "yellow" type) one may see at almost any time lurid portrayals of presumed scenes set forth as authoritative facts. Such papers violate almost every known principle of scientific scholarship. Yet such papers are widely read, with results that are probably very unfortunate. The writers for such papers are compelled to stifle any of the scholarly habits they may have possessed. Most newspapers are a mixture of both good and bad. Perhaps it will not be too much out of place at this point to digress long enough to discuss newspapers as a source of information.

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[7] Arthur Ponsonby, *English Diaries: a Review of English Diaries from the XVIth to the XXth Century* (Methuen and Co., London, 1923), pp. 10-11. A most excellent and objective autobiography written largely from diaries is Beatrice P. Webb's, *My Apprenticeship* (Longmans, Green and Co., London and New York, 1926). This work incidentally is a most valuable treatise on sound principles of methodology, and for those interested in following the development of a scholar's mind from the earliest recollections to the stage in which genuine scientific objectivity is attained, manifold payment in satisfaction, delight, and entertainment will be received.

The newspaper as a source

As a source for reliable information the newspaper cannot be judged as a whole. The modern newspaper is a composite of many kinds of news and the principles of scholarly criticism must be applied to each separate item.[8] No item is any better than its source, and the sources of information on which the newspaper draws are many and varied. There seems to be a prevailing idea among embryonic scholars that newspapers are a very reliable source for information. True, there are certain types of facts published in the modern papers that hardly need be questioned; among these are the various statistical reports, such as banking, foreign exchange, and marketing reports, also the weather reports, official notices, court calendars, and similar notices, which come from official sources that have no reason for issuing fraudulent reports. Inaccuracies occur, of course, but such errors are rather infrequent because accuracy in such items is usually of great importance to the sponsors.

Aside from the types of items just indicated, the most exacting principles of criticism should be applied. Associated press reports may be better than those of an independent reporter, but they are not necessarily better. Reporters are prone to color and embellish at every opportunity, with the idea of tickling the fancy of the public rather than to instruct. Purported interviews generally are recognized to be very unreliable and sometimes faked.[9] Newspapers are literally saturated with surmises, imaginings, and unverified statements that should never pass the eye of the critic. While it is widely recognized that some newspapers have such low moral, ethical, and scholarly standards as to be unreliable in almost every important fact, so much so that no responsible scholar would risk his reputation by relying upon such a source for information, yet every reader should realize that no newspaper is of such a high order that the principles of critical scholarship should not be applied to it.

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[8] See especially Lucy Maynard Salmon, *The Newspaper and the Historian* (Oxford University Press, Oxford, England, 1923), *passim*, but particularly the Introduction and Chaps. XV-XVI. Professor W. Brooke Graves (Ed.) *Readings in Public Opinion* (D. Appleton and Co., New York, 1928), Chap. IX, "The Press and Public Opinion," includes a choice collection of articles and comments upon the different kinds of newspapers, their policies, morals, and influences brought to bear upon them, which may be consulted with profit by the interested reader.

Was the author being questioned?

It is a fairly well-recognized fact that questions tend to suggest answers, or at least the form of the answers, and even though the author may not have been seeking to please his questioner consciously his replies are apt to be controlled to a large extent by the nature of the questions. Consequently, it is necessary to learn what questions were asked and what reactions and preconceptions they stimulated in the mind of the person questioned.

Cases in which the author was not the observer

It must be borne in mind that most of the preceding analysis rested upon the assumption that the author observed the facts himself. As a matter of fact, relatively little of this is done in the fields of the social sciences, and as a result these sciences are compelled to rely upon documents which the direct (so-called exact) sciences would reject. In nearly every social science document the majority of the statements are reproductions of the statements of others; very few come to the author at first hand. In many cases authors are mere agents of transmission, the true authors being the persons who supplied the information. Consequently the great majority of research work which involves the use of documents becomes far more complicated than might be inferred from the study of the preceding principles applied in cases where the author observed directly. Since most information comes from secondary sources (meaning secondary *statements*), the problem is to carry the criticism back to the original observer, if he can be discovered, and apply to him the principles laid down in the foregoing pages. Frequently the clues must be followed from one intermediary to another until the author of the original statement is found. In practice a lack of documents and clues usually prevents the research worker from ever reaching the original observer. The problems are rendered almost insoluble when writers fail to make citations to their sources of information, a practice that seems to be playing havoc with scholarly work. While a profusion of footnotes may not make a work more interesting or inviting to read, footnotes add infinitely to its value as a piece of scientific work. They at least show that the author has an appreciation of critical and scientific scholarship.

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[9] Salmon, *op. cit.*, Chap. X, "The Interview."

It is probably true, therefore, that in most cases the original observer is never reached; he is anonymous. This leads us to our next question.

How are anonymous statements to be criticized?

The research worker has very little at hand of a tangible nature to aid him in solving this problem. Through a careful and intensive study of the document he can only make an expert guess in determining whether the various statements have come from the same author. A certain bias may be common to all which would tend to attest their authenticity. Expressions, words, thoughts, or prejudices peculiar to other authors may establish their identity or at least lead to the conclusion that the passage is an excerpt from an earlier source. When it is established that the statement is borrowed from an earlier author, the critic needs to know whether the transmission has preserved or distorted the original statement.

In analyzing the problem of handling the questions involved in the transmission of anonymous statements (known formally as *tradition*), Langlois and Seignobos say that "No second-hand statement has any value except in so far as it reproduces its source."[10] With these observations we agree. They point out further that the critic needs to know whether this transmission from hand to hand has preserved or distorted the original statement; above all, whether the tradition embodied in the document was written or oral when borrowed.[11] In brief, they conclude that only written transmission is accepted in the established sciences, since writing tends to fix a statement and to insure its faithful transmission, while the general tendency is to modify oral tradition continually. Critical scholars, however, are not agreed that oral tradition should be rejected as a source of fact. Vincent, for example, says: "It must not be assumed that oral tradition is an impossible means of transmission of truth. Although subject to distortion and error it is quite reasonable to expect that facts may be carried for a long time in the memory." [12] He adds however that ". . . the dangers of the distortion of truth are so much greater in oral than in written tradition that the investigator must consider the peculiar method by which a myth is generated." [13] Buckle took the unenviable position that history was injured by the introduction of the art of writing, his contention being that when a people became able to read the traditions of other peoples their literatures became mixed; prior to that time each people maintained its separate corpus of mythology and anecdote.[14] It is remarkable that a writer with the qualifications of Buckle, in writing of the old ballads sung by the early peoples before the days of letters, can say that "They are not only founded on truth, but, making allowance for the colorings of poetry, they are all strictly true." [15]

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[10] Charles V. Langlois and Charles Seignobos, *Introduction to the Study of History* (Henry Holt and Co., New York, 1898), pp. 179-180.

Langlois and Seignobos point out quite appropriately with respect to oral tradition that "We rarely have direct information as to statements being thus derived; authors who borrow from oral tradition are not anxious to proclaim the fact." [16] Only by an indirect method can it be determined whether the tradition was oral or written. If written transmission was impossible, it is permissible to conclude that the fact reached the author only by oral transmission. The writer agrees with Langlois and Seignobos that it is probably a good rule which insists that oral tradition must be rejected as a source of fact. Only in one manner may it be used and that is to determine the time and extent of its influence. It may have some value in shedding light upon concepts of the time but none as to the actual existence of facts in the sense of events.

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[11] To use the term "written tradition" is to distort the original meaning of the term tradition which properly applies to oral transmission of information. It has become rather conventional, however, to speak of both written and oral tradition.

[12] John M. Vincent, *Historical Research* (Henry Holt and Co., New York, 1913), p. 142.

[13] *Op. cit.*, p. 143.

[14] Henry T. Buckle, *History of Civilization in England* (Longmans, Green and Co., New York and London, 1901), Vol. I, pp. 296-297; see also Vincent, *op. cit.*, pp. 145-146.

[15] Buckle, *op. cit.*, p. 295.

[16] *Op. cit.*, p. 180.

Legend is an outstanding and striking form of tradition. While it is difficult to draw a clear distinction between tradition and legend, conventional use of the term legend seems to imply the fabulous or mythical. The distinction appears to lie in the fact that there is a possibility of verifying tradition but that there is no such prospect with respect to legend. Indeed "legend" and "myth" appear to be closely related if not synonymous terms. In general, a myth is considered as dealing with the actions of the gods or godlike beings, while a legend, though it may include supernatural incidents, usually concerns human beings. The position assumed by Langlois and Seignobos that legend is exclusively oral tradition seems untenable not only because of conventional usage but also from the standpoint of etymology. If legends be considered as tradition that cannot be verified, then legends as bases of facts in the sense of events have no scientific value, aside from what they may yield as to the concepts at given times.[17]

Anecdotes, strictly speaking, belong to the field of oral tradition although of course in modern times they are also recorded. Like folk-lore, they have their origin in confused recollections, allusions, mistaken interpretations, imaginings of all kinds which fasten upon particular persons and events.[18] Scholars are agreed that it is impossible to exact any trustworthy information from anecdotes by any process whatever and that investigators must make up their minds to treat them as a product of the imagination and reject every statement of anecdotal origin. This statement should have especial significance to those persons who believe it is possible to reject those details in anecdotal and legendary narratives which appear impossible, absurd, miraculous, or contradictory, and yet retain as factual and as history what appears to them to be rational.[19]

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[17] The reader might find it profitable to study the manner in which Sir James G. Frazer, in his stupendous works, has handled the folk-lore (which includes tradition, legend, and myth) of the Old Testament. See his *Folk-Lore in the Old Testament* (Macmillan and Co., Ltd., London, 1919), 3 vols., and an abridged edition in one volume (The Macmillan Co., New York, 1923), and his *Golden Bough* (Macmillan and Co., Ltd., London, 1906-1914), 1st-3d eds., 12 vols., and an abridged edition in one volume (The Macmillan Co., New York, 1922). *The Golden Bough* is an elaborate study in the myths, taboos, and magic of religion.

Accepting, then, the principle that oral tradition, bearing in mind that tradition is transmission of *anonymous* statements, has no place in a critical work, it still remains to inquire into the value of written tradition. On this point it should be clearly understood that the borrowed information is no better than the source, which in many cases remains anonymous. The only questions one can work with are whether the author reproduced his source faithfully or whether he is in the habit of altering and rearranging his source materials. The more servile the reproduction, the more valuable the passage. The question must also be raised as to whether the author can have had exact information; if not, his statements are worthless. Only in cases where the author could have had exact information and reproduced it faithfully can written tradition be of *any* value, and even then it is of questionable value until certain tests have been applied to it. No exact science would accept such evidence, but the historian is compelled to do it in many instances; otherwise he would have much less material with which to work. By applying certain critical tests, a negative and destructive criticism, to these unverified and anonymous statements, he is able to arrive at certain valid conclusions that are acceptable in the scholarly world. To apply fewer tests, or methods less scholarly, is to produce unsatisfactory results; such procedure involves greater looseness and greater inexactness where there is always too much at the very best.

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[18] *Cf.* Langlois and Seignobos, *op. cit.*, p. 182.

[19] Langlois and Seignobos treat legend as one of the most advanced parts of criticism. Their treatment of the subject is well worth a careful study. Ernst Bernheim in his *Lehrbuch de Historischen Method* (Duncker and Humblot, Leipzig, 1903), 4th ed., pp. 380-390, also has a good treatment of this subject.

Principles to be applied in the use of anonymous statements

In applying critical principles to anonymous statements (bearing in mind that we are restricting the term to written tradition, the only type of tradition that may be acceptable), the scholar recognizes that many of them ordinarily are not subject to error or alteration for the purpose of deception.

1. Some facts are so large and are so well known that it is difficult to make any error concerning them. Most facts of this type are well recognized. One is not compelled to re-establish the fact every time someone restates it that Wilson and Roosevelt were Presidents of the United States or that this country passed through a civil war period.

2. Passing from the question of error to that of falsehood, the critic will recognize that there are facts of such a nature as to render a falsehood improbable. An author would not falsify if he believed the falsehood would be ineffectual. To determine whether the author was in this position it is necessary to raise at least three questions.[20]

(a) Is the fact as stated clearly prejudicial to the effect which the author wished to produce? If it runs counter to the interest, vanity, sentiments, and literary tastes of the author and his group, or to the opinions which he made a point of not offending, then it is probable that the statement was made in good faith. But even here the critical scholar will exercise great care. It is easy to mistake a boast for a confession. When a rich man says he has worn a coat for twenty-five years, that is not a confession ordinarily. The critic must be very certain that he understands what were the author's notions of his own interest; these may be very different from those of the critic. The latter cannot know too much of human motives in such cases.

(b) Is the fact as stated so obviously known to the public that the author, even if tempted to falsehood, would have been restrained by the certainty of being detected? This fear of detection acts unequally on different minds; strongly on men of culture and self-control, feebly on men who have not learned to control their emotions. Again the critic must be careful in applying his test. He must know the author and what idea the author probably had of his readers. He must have clear ideas as to the motive for deceiving and weigh this motive against the author's probable fear of detection. In short, the critic must limit closely the field in which he applies this test. He may apply it safely in cases where the facts are easy to verify, and where the public would have an interest in verifying them.

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[20] This discussion follows a similar one by Langlois and Seignobos, *op. cit.*, pp. 185-188, to whom the author is indebted for the principal suggestions on these points.

(c) Is the fact as stated a matter of indifference to the author? In such cases there is no reason for him to misrepresent it. In this category fall facts of a general kind, usages, institutions, objects, and persons which the author mentions incidentally. In a narrative saturated with falsehood there are some truths and facts. Such facts, which have no particular interest to the author, are recognized easily.

C. THE DETERMINATION OF FACTS[21]

After the critic has completed all the processes of internal criticism, he has in his possession, as a result, *conceptions* and *statements*. He does not have positive results in the sense of truths; internal criticism is largely destructive in nature, yielding in general negative results. Since conceptions and statements represent two different kinds of results they must be treated according to different principles.

Conceptions as facts

Every conception, however expressed, is in itself a definite unimpeachable fact. Its existence may be learned from a single instance and proved from a single document. The fact that the conception was expressed by the author shows it was in his mind or that he borrowed it from some one else; it originated in the mind of some one. Every concept is a fact and is to be treated as such, but it is a fact in psychology taken directly from the document, nothing more. By applying the principles of external criticism this type of fact may be localized and placed in the proper period, country, locality, and credited to the proper author.

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[21] For an excellent discussion of this subject, see Langlois and Seignobos, *op. cit.*, Bk. II, Chap. VIII.

The raw materials which make up concepts also furnish indisputable facts. Imagination does not create its objects, it takes the various elements which compose them from real facts as understood in life. These elements which compose the concepts may be studied, isolated, and treated as facts. But extreme care must be used in such cases. The danger lies in seeing or inferring more than is really there.

Statements as facts

Statements from a single source may yield probabilities more or less strong, but nothing more. Internal criticism of one source can prove no fact. An unsupported statement is not scientific evidence from which truth may be drawn. Perhaps no statement can be of more importance to the student than this. He must impress the thought on his mind repeatedly until it becomes a part of his method of thinking. After all the tedious labor of external and internal criticism, statements in a single document as objective facts yield only probabilities and presumptions. Criticism was used to destroy and reject the false, erroneous, and worthless. All that remains is subject to doubt. No other attitude can be assumed logically or properly by any person who makes pretense to scholarly methods.

A comparison of independent statements necessary to yield scientific conclusions

It is a common principle in the exact sciences, when observation is used, not to base a scientific conclusion on a single observation; instead, the fact must be corroborated by several responsible and independent observers before it will be affirmed positively. The same principle holds in the social sciences. An isolated observation cannot yield a scientific conclusion until it has been supported by several different and independent observations. It is permissible to quote a single and unsupported observation but it is not permissible to draw conclusions from it. It is common practice for scholars to quote isolated observations giving the observer's name, thereby permitting the reader to secure what information he may from it. They may yield something of value as facts in the form of concepts, but nothing more. The author gives the reference, thereby giving credit and placing the responsibility, but he himself will draw no conclusion from an unsupported single observation. This principle of scholarship explains why the works of scholars are so frequently saturated with the opinions and observations of others, cramped with voluminous citations and footnotes, and close with but little space given to the conclusions of the author. Such material, ordinarily, does not furnish light reading, is the result of painful and prolonged effort on the part of the author, and is generally most unwelcome to the publisher because of the increased expense in publishing. Nevertheless, it is usually in such material that the scholarly work is found. It represents the combining of observations and this is the way sciences are developed.

Therefore it must be observed that after all the steps in analytical criticism have been taken *there must be a comparison of statements in order to establish truths.* After the process of comparison has been completed and the facts established, the author is ready to begin his writing (synthesis).

Principles to be used in the comparison of statements

In the comparison of statements certain critical principles must be observed. It has been said already that no single observation establishes a fact. A scientific fact is one supported by several different and independent observations. Each observation may be subject to error in details but if the several independent observations agree in the main the central fact is established, since the observers have all seen the same fact and have reported it, in general, correctly. Once these independent statements are brought together, the extent of the real information regarding the facts may be learned.

The definiteness of the conclusions depends upon the relations which exist between the statements. The investigator must establish this relationship as clearly as possible. Since it is true that only several *independent* observations of a fact will permit its categorical affirmation, the problem is really one of establishing the independence of the several supporting statements. What appears to be several independent statements may all come from a common source. In such cases there is really but one independent observation and this cannot establish a truth. Frequently various newspapers secure their information from a common source, and to the unsophisticated person engaging in research it might seem that the various newspapers were independent sources supporting one another and thereby establishing the fact. When the various sources agree perfectly the natural tendency is to believe the evidence is conclusive. As a matter of fact, this is one of the best reasons for becoming suspicious of the independence of the observations. It is practically conclusive proof that the statements are not independent but are copies of one another or originated from a common source. Independent observations will show minor variations in detail; two independent observers cannot possibly give accounts that will coincide in every respect. The only observations which may be considered truly independent are those contained in different documents, written by different authors who worked independently of one another, who belonged to different groups, and who worked under different conditions. The reader should learn to recognize the cases which demonstrate the lack of independence.

Cases which reveal lack of independence in the origin of statements

(1) Frequently the facts reported are of such a nature that they could have been observed and reported by but one observer. All other reports must be mere copies, and in scientific method all borrowed statements are discarded; they are not independent and can have no value equal to the original. The problem is always to reach the original in order to determine its value.

(2) In other cases various observations which appear in different documents and which support one another may have been written by the same author. Of course it is possible that he may have made each observation afresh, which, of course, would add to the value of his observation, but nevertheless the fact can hardly be said to have been established scientifically by repeated observations made by the same individual. Ordinarily the cases are those of the same observation recorded in different places by the same author.

(3) There may have been several observers but they may have selected one of their number to write the final results of the

various observations. In such cases the final report may represent the opinion of the writer only, or if it has been checked over and indorsed by each observer it may be considered properly as a fact supported by the independent observers. The problem for the critic in such cases is to determine the exact nature of the procedure. If this is not possible the careful critic will lean toward conservatism and use the observation as a single one.

(4) The several observers may record their observations in different documents but the observers may have been under the same influences, may have the same bias, the same prejudices and interests, in which cases the observations cannot be considered as representing more than one point of view. Various sorts of organized propaganda in behalf of some issue come within this class.

Evaluation of independent statements which disagree

Let us suppose that two observations are truly independent but disagree, what is the solution? If the disagreement is real, at least one of the statements is false and both may be false. In such a case no definite conclusion can be drawn, for at the best there can be but one correct observation and this cannot establish a fact in itself. There seems to be a general tendency among writers to split the difference; the idea appears to give them the impression that they are conservative and safe and that they will impress others in the same manner. This attitude is not scholarly. Ordinarily a fact is or is not true and the scholar must reserve judgment until he can establish the fact. One writer observes that a certain distinguished man is 79 years old, another says he is 81; the research worker, not knowing which is correct, cannot solve the problem by saying he is 80—all may be incorrect. The scholar is not a compromiser and for this reason the untrained consider him pedantic, arbitrary, over-exacting, and tiresome. Unfortunately some scholars may be truly characterized in these terms, but the genuine scholar will learn to keep his sharp edges concealed in humility and in consideration for others' opinions.

Where a majority of observers take one point of view and a minority another, it does not follow that the critic should accept the majority view. If one group is right it follows that the other group is wrong, and it may well be that the majority is wrong. The scholar will not decide on the basis of the numbers on each side. The opinions of two persons who are well acquainted with a fact are worth more than the opinion of scores who know little or nothing of it. Of course it is by external criticism that one group should be eliminated; but if the critic has been unable to do this he cannot draw conclusions, he can only state opinions as they exist and cite his authorities.

Deriving truth through the harmony of facts

It should be observed that agreements between independent authorities as to facts *may* yield conclusions that are indefinite. Frequently such conclusions can be made final and definite by a study of the so-called *harmony of facts.* Sometimes facts standing alone are only imperfectly proved but when taken together confirm each other and produce a collective certainty. Investigators who are trying to establish definite theories as to the existence or non-existence of business cycles are confronted with this question. They observe certain phenomena at different periods and attempt to fit the facts together so that one confirms another and from this harmony of facts derive a theory. Detectives, with isolated facts in their possession, attempt to piece them together so that they will support and confirm one another and solve a mystery. Frequently the missing link in evidence is found which confirms the other isolated facts and permits the drawing of definite conclusions. But the main point under consideration in the study of the *harmony of facts* is that the reality of various isolated facts may be definitely established by being placed together so that they confirm one another. Once they confirm one another, new conclusions may or may not be drawn but the reality of the facts has been established. The detective in following the criminal finds he was in certain places on certain days; he puts the days and places together, finds they harmonize into a coherent whole and has in his possession a complete story of the culprit's travels. The presence of the criminal in a certain place at a certain time may be open to question until all the time schedules and places confirm one another. This is harmony of facts.

The place of improbabilities in scientific method

Occasionally there is a conflict between facts apparently established by documents and the great body of facts in the social sciences which have been established definitely by scholarly methods of research. In such a case the apparent fact is considered an *improbability*. The question of improbability raises many complexities since it is a relative idea and varies with individuals. Clearly what is improbable to the masses may not be improbable to the scientist. Only the notions of improbability as held by the scientists are of consequence. In such cases it is the proper procedure to state that the conclusions derived from the documents conflict with the observations of scientists and are therefore improbable.

The place of miracles in scientific method

When conclusions set forth in documents conflict with the established facts in the exact sciences, they are not only improbable but must give way absolutely. Thorstein Veblen put it as follows: "Furtively or by an overt breach of consistency, men still seek comfort in marvelous articles of savage-born lore, which contradict the truths of that modern science whose dominion they dare not question, but whose findings at the same time go beyond the breaking point of their jungle-fed spiritual sensibilities."[22] The idea of a *miracle* illustrates this situation. The question of miracles has been a bitter one with the masses but for the scientist both the case and the procedure are simple. Observations recorded in historical documents can never be of equal value with those of contemporary scientists. Historical method, which is the principal method of all research outside the exact sciences, is an indirect method and as such can never have a standing equal to that of the exact sciences. In the literature of every people are found accounts of the miraculous, and the masses, controlled by religious passions and various kinds of enervating sentimentalities, find it easier to believe in the miraculous than in the conflicting theories of the modern exact sciences. The true scientist must proceed, however, regardless of what the untrained minds of the masses are prone to believe.

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[22] Thorstein Veblen, *The Place of Science in Modern Civilization* (B. W. Huebsch, New York, 1919), pp. 26-27.

There is a constant fear in the minds of many people that science conflicts with and undermines religion. Many outstanding scientists and churchmen have no such fears and entertain no such ideas. Much hinges, of course, upon just what in religion must be saved or rather cannot be destroyed by scientific knowledge. No scientist or churchman with vision could conceive of the fundamentals of religion being destroyed if by fundamentals we mean the consciences, ideals, and aspirations of mankind. Mankind is instinctively religious. Only the superficial and man-made trappings of religion may be endangered, and it is the fear of this that has entrapped the masses. Specific religions may come and go, but not religion. Dr. Robert A. Millikan, one of the great scientists of this country, recently formulated and secured the signatures of fifteen eminent scientists, ten prominent men of affairs, and ten leading religious workers to a statement that there is no conflict. Part of the statement to which they subscribed was: "The purpose of science is to develop, without prejudice or preconception of any kind, a knowledge of the facts, the laws, and the processes of nature. The even more important task of religion, on the other hand, is to develop the consciences, the ideals, and the aspirations of mankind. Each of these two activities represents a deep and vital function of the soul of man, and both are necessary for the life, the progress, and the happiness of the human race.

"It is a sublime conception of God which is furnished by science, and one wholly consonant with the highest ideals of religion, when it represents Him as revealing Himself through countless ages in the development of the earth as an abode for man and in the age-long inbreathing of life into its constituent matter, culminating in man with his spiritual nature and all his God-like powers." [23] Timid souls, as the late Dr. E. E. Slosson pointed out, should be assured by the signing of the joint statement by this group of distinguished thinkers in various fields.[24] "The real conflict," he says, "is not between science and religion as such, but rather between dogmatic and intolerant religionists and scientists on the one side and liberal and tolerant religionists and scientists on the other side. . . . The effort to fetter freedom of investigation or to force thought into fixed formulas is equally fatal in science and religion."[25] With these contentions the author is in total agreement.[26]

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[23] Quoted in F. S. Harris and N. I. Butt, *Scientific Research and Human Welfare* (The Macmillan Co., New York, 1924), pp. 354-355.

[24] *Ibid.*

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[25] *Ibid.*

[26] For an opposite point of view, see E. Haldeman-Julius, *The Outline of Bunk* (The Stratford Co., Boston, 1929), p. 247. He says that the effort of such men as Henry F. Osborn, Michael Pupin, and Robert A. Millikan to reconcile science and religion is a species of bunk. Mr. Haldeman-Julius also issues a general indictment against ideals as contrasted with ideas in his pp. 283-289, and 372-378. *Cf.* James Harvey Robinson, "Religion," in Charles A. Beard (Ed.), *Whither Mankind* (Longmans, Green and Co., New York, 1928), Chap. XI.

Dr. A. S. Eddington, *The Nature of the Physical World* (The Macmillan Co., New York, 1928), Chap. XV, does not see a conflict between science and religion. He says, however, (p. 351): "The conflict will not be averted unless both sides confine themselves to their proper domain; and a discussion which enables us to reach a better understanding as to the boundary should be a contribution towards a state of peace. There is still plenty of opportunity for frontier difficulties. . . . According to the assertion above science and theology can make what mistakes they please provided that they make them *in their own territory*; they cannot quarrel if they keep to their own realms."

Julian S. Huxley in F. S. Marvin (Ed.), *Science and Civilization* (Oxford University Press, Oxford, England, 1923), Chap. XI on "Science and Religion" finds no conflict. He says (pp. 286-287): "Religion itself is the reaction between man as personality on the one side, and on the other, all the universe with which he comes in contact. . . . But because it is a reaction of the whole personality, it must involve intellectual *and* practical *and* emotional processes. . . . Some men will be more concerned on the emotional, others on the intellectual, others again on the moral side: but it is impossible to separate any one of the three aspects entirely from the others." He conceives of God as the sum of the forces acting in the cosmos as perceived and grasped by the human mind. In this concept he thinks ". . . we find our assurance that our human life is a part of a whole that is not antagonistic, but moves in the same general direction as do our history and aims." (P. 300). Huxley also says with respect to the miracle that it "becomes (when not an illusion) simply an event which is on the one hand uncommon, and for which, on the other, there has been found no explanation. Revelation too goes by the board. . . ." (P. 288). See also Alfred N. Whitehead, *Science and the Modern World* (The Macmillan Co., New York, 1925), Chap. XI, "God," and Chap. XII, "Religion and Science."

Walter Lippmann says that the proposals for peace between scientists and churchmen are, in effect, proposals for a truce; that while it may be workable temporarily, it is inherently unstable; and there is bound to be aggression from both sides. See his *A Preface to Morals* (The Macmillan Co., New York, 1929), pp. 121-133. See also his pp. 118-120 on miracles. He put it well when he said (p. 121): "It cannot be said, I think, that the people at large, even the moderately educated minority, understand the difference between scientific method and revelation, or that they have decided upon reflection to trust science. There is at least as much mystery in science for the common man as

At times the scientifically trained person is hampered by the fact that public officials, who may know little or nothing of scientific methods, who may believe in miracles, who may believe in the infallibility of their own untrained minds and uncurbed emotions, and who may be motivated by religious bias, cheap *isms,* and rabid and radical sentimentalities, can cut off funds necessary for research, can determine the type of teaching that shall take place, can have textbooks rewritten to include that which suits their particular likes or dislikes, and do many other things to hamper the advancement of truth and scientific methods. But it has been thus throughout the ages; the trained scientist knows this, and while he may suffer some unpleasant experiences, he is not unduly discouraged; in fact, the situation appears to be improving rapidly despite the fact that the attitude of the untrained masses toward the sciences today in some cases is little if any advanced beyond the attitudes found in the Middle Ages. It is a sad commentary that even yet true scientists are ridiculed, driven from public platforms, expelled from denominational and state college faculties, threatened by self-appointed censors, tried before councils, expelled from various organizations, and their books banned.

One is tempted to quote with approval from Buckle, relative to the interference of legislators and politicians with intellectual pursuits. He says, among other things: "In the same meddling spirit, and with the same mistaken notions of protection, the great Christian governments . . . have made strenuous and repeated efforts to destroy the liberty of the press, and prevent men from expressing their sentiments on the most important questions in politics and religion. In nearly every country, they with the aid of the church, have organized a vast system of literary policy; the sole object of which is, to abrogate the undoubted right of every citizen to lay his opinions before his fellow-citizens. In the very few countries where they have stopped short of these extreme steps, they have had recourse to others less violent, but equally unwarrantable. For even where they have not

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there ever was in religion; in a sense there is more mystery, for the logic of science is still altogether beyond his understanding, whereas the logic of revelation is the logic of his own feelings."

openly forbidden the free dissemination of knowledge, they have done all that they could to check it. . . . They could hardly have done worse if they had been the sworn advocates of popular ignorance. Indeed, looking at what they have actually accomplished, it may be emphatically said, that they have taxed the human mind. They have made the very thoughts of men pay toll. . . . That is the penalty inflicted on him for instructing his fellow-creatures. . . . It is truly a frightful consideration, that knowledge is to be hindered, and that the proceeds of honest labor, of patient thought, and sometimes of profound genius, are to be diminished, in order that a large part of their scanty earnings may go to swell the pomp of an idle and ignorant court, minister to the caprice of a few powerful individuals, and too often supply them with the means of turning against the people resources which the people called into existence." [27]

While Buckle's extreme picture is true in individual cases today, it is not universally true or even a fair picture of the general situation. Much is being done by governments and industrialists to foster truly scientific research. Later chapters will make these facts clear. Neither is the scientist particularly concerned over the isolated and periodic outbreaks by the unqualified who for the time being are able to do him harm. He proceeds about his business, usually working in the interests of the very ones who seek to handicap him, expecting his rewards finally even though maligned and hindered at various stages of his work.

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[27] Buckle, *op. cit.*, pp. 284-285.

CHAPTER VII

GATHERING DATA

The plan of investigation

The investigation of a problem should proceed in an orderly manner, according to a systematic plan, in order that the margin of error may be reduced to a minimum. Verified knowledge is not acquired by haphazard methods. A scientific mind is an orderly mind, and an accurate investigator is a methodical investigator. One who decides to make a scientific study should begin by carefully mapping out a plan of attack, that is, he should have a working technique. The logical steps in such a plan will be outlined in this chapter and analyzed rather fully in the chapters that follow.

Selecting and formulating the problem of research

In selecting the problem for research the investigator should be guided by certain preliminary considerations. (1) He should seek if possible his problem in his major field of interest in order that he may do himself and his subject full justice. However, he may not be entirely free to follow a purely intellectual interest; he may hold some official or business position which controls his field of investigation, or pecuniary considerations may materially limit his freedom of choice. In such circumstances he should recognize frankly the incompleteness of the results. (2) He should select a problem that he is competent to investigate. If special qualifications are necessary, such as knowledge of the law or of statistics, it would be folly for one not so qualified to attempt the investigation. One must have tools appropriate to one's tasks. (3) Having decided tentatively upon a subject, its availability from the standpoint of its novelty should be determined. Has it been covered adequately already, or is it now being investigated by some competent persons? If the field has been covered, does it need reworking, either because it calls for a revaluation and a new interpretation or because there are gaps to fill or extensions to be made? (4) Is there available material affecting the problem? It may be impossible to secure sufficient data, or it may be procurable only at too great expense in time or money. The important source materials may be in foreign lands or so far distant as not to be obtainable by the investigator, as he may not have the necessary time or money for travel. In order to determine this and the foregoing point a preliminary bibliographical survey is necessary. The investigation of sources should not be begun until after their extent and accessibility have been satisfactorily determined; otherwise much time and labor may be wasted in duplicating work of others or in commencing projects that cannot be completed. Of course the scientist and scholar should be willing, in the interest of progress, to take a reasonable chance on the materials, but he should not take unnecessary chances. (5) The solution of the problem to be investigated should be of some practical value to society or to the person immediately concerned. Research undertaken for the sole purpose of training the investigator in methodology is effort misspent, for this training may be secured while searching for practical truth. (6) Other things being equal, he should select the timely or more important question for solution, and he should give preference to problems the solution of which would promote concretely the social well-being over those that would merely gratify our intellectual curiosity. (7) The delimitation of the problem is essential to an effective attack upon it. The problem should be confined within sufficiently narrow limits to make the investigation thereof thoroughly exhaustive and to avoid confusion in the collection and classification of data. The initiate often makes the mistake of trying to do too much, thus spreading his labor thinly over a large area and not being able to penetrate deeply at any point. Even experienced workers find it difficult to speak with authority in the language of generality, as evidenced by the numerous "Outlines" now on the book market. On the other hand, there is little danger that the problem will be too circumscribed, as it is likely to open up while under investigation. (8) Finally, there should be a preliminary or conditional formulation or definition of the problem, a clear statement of objectives to serve as a working basis, but a statement that should be subject to continuous reformulation if subsequent developments require it. The statement of objectives should indicate that the aim is to discover and not to prove, and this principle should be adhered to without qualification if the results are to qualify as a work in research.

The compilation of a working bibliography

With a tentative subject selected, the first step is to compile a complete and exhaustive bibliography in a general library. The investigator begins the building of his bibliography by consulting the card catalogs and reference books in the available libraries. The bibliography should be made on standard 3 x 5 filing cards or slips, using one card or slip for each reference. On each card or slip should be noted, if possible, the following information: (1) The name of the author, or the person responsible; (2) the title of the piece, indicating its character, whether it is a legal report, a private letter, a legislative document, a general work, a manuscript, and so on; (3) the form of the piece, that is, whether it is the original, an edition, a copy, a translation, or an adaptation; (4) the state, or the material or physical condition of the piece—whether well preserved; (5) any facts as to the conditions and circumstances under which the piece was produced, such as the character, training, purposes, and environment of the author; (6) the agency, place, and time of publication; and (7) the value or rating of the piece, this to be added after the reference has been investigated. It is well to leave a margin on the left-hand side of the card for additional notations. In the upper left-hand corner of the card enter the call numbers of the libraries where the investigator is working.[1] These suggestions are embodied in the following sample cards. Supplementary cards for additional data may be added.

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[1] If a periodical reference is not obtainable in near-by libraries, the investigator should consult the *Union List of Serials,* a publication which lists the periodicals subscribed for by about 200 cooperating libraries in the United States and Canada, and gives the period during which they were subscribed for and also the bound volumes of each.

Bibliographical note for an entire work.

Beard, Charles A.
American Government and Politics.
— The Macmillan Co. New York. 1928.
— Fifth edition.
— Part I. The Larger Aspects of Government.
— Part II. The National Government.
— Part III. State and Local Government.
(From Table of Contents.)
— Beard, Charles Austin, Ph.D. Columbia.
Professor of political science, Columbia; resigned, 1916, to become director of Training School for Public Service, New York City; member of many historical and economic societies; author of several works on politics and history.
— *American Government and Politics* a standard work widely used as text in leading colleges and universities.

Bibliographical note on a part of a work.

Merriam, Charles E. "The Spoils System."
— In his *The American Party System,* Chaps. IV-VII inclusive. The Macmillan Co. New York. 1922.
— A good account by one who is thoroughly familiar with machine politics in Chicago; one time candidate for the nomination for mayor of Chicago; professor of political science, Chicago University.

All references should be recorded completely and in proper form. These bibliographical references later become part of the footnotes and the footnote references cannot be made accurately unless the bibliographical notes are accurate, without returning to the sources again for additional information. Also, the formal bibliography, if one is included in the finished work, is made from the bibliographical notes, an added reason for making these notes as complete as possible.

The construction of an outline

Just as a builder collects and relates his building materials to an architect's plan, so the researcher assembles, analyzes, systematizes, and correlates his data in relation to an outline of his problem. There is this important difference, however: while building materials are made to fit the blue print specifications, the scholar's outline must fit the materials. The making of the outline is a synthetic process, the assembling of the elements of a problem into a logically, and, if possible, sequentially related whole. Obviously the outline cannot be made in its final form until the parts or elements of the problem have been discovered, until the inquiry has been sufficiently thorough to reveal all the essential attributes of such problem, and until all the data have been evaluated.

The outline serves two purposes: while the investigation is in progress it is a guide for the orderly filing away of the data; when the data are being analyzed and organized into a manuscript the outline becomes the blue print according to which the constructive work is carried out. The researcher may choose to carry on these two processes, the collection and the analysis of the data, simultaneously; or he may put off the synthetic work until all the available material bearing on the problem is in his possession, in order that he may interpret and evaluate each item thereof in relation to the whole. The second method is more scientific than the first. Obviously each document should be analyzed *as to its meaning* when it is being searched, but its significance or its value cannot be safely determined until it has been weighed with every other document bearing on the same point. The scholar is jury and judge in the case and should not render judgment until after all the evidence is in. A given problem may be divisible into a number of parts, each of which may lend itself to independent treatment. In such case the second method described above may be applied successively to each part, that is, the manuscript may be worked out in installments.

If the worker knows little about the subject he is about to investigate he may decide to start with a mechanical outline, grouping his materials chronologically or geographically. This is a convenient expedient for the filing of notes during the investigating stage, which ordinarily is discarded in favor of a logical arrangement when the synthetic work is begun. On the other hand, a logical outline may be used from the outset, based upon such general information or impressions as may be derived from the collection of bibliographical notes and the reading of general or secondary works in the field of his problem. The outline should be regarded as tentative until the last page of the manuscript has been put into final form.

There are no infallible formulæ for the making of this outline but the following suggestions may be helpful. First, the relation of the elements to the whole must be determined. Those that are of relatively equal importance should be given a coordinate position in the outline. If the elements are of unequal weight they may be arranged in the order of their importance. The elements should then be broken up into their constituent parts, and the resulting subsidiary elements further separated until simple elements are obtained as far as possible. Secondly, the relation of the primary elements to each other should be considered. If a sequential relationship exists the order of arrangement is simple and logical; if, on the other hand, they are of equal weight and not sequential, the problem of arrangement is one of expediency which calls for the exercise of an intelligent discretion.[2]

It is difficult to develop an outline that is too detailed. The shortest outline that should be used is one which includes what normally would be side-headings in a book if side-headings are used. A better outline is one which includes not only what would be side-headings, but a suggestive word or sentence for each important paragraph of the text. Such an outline makes it easy to detect overlapping, gaps, and inconsistencies. In general there might be three outlines: (1) the complete outline reaching down to individual paragraphs; (2) an outline including the principal topics, those that would appear finally as side- or center-headings if such headings are used; and (3) an outline of chapter headings. Such a system makes it possible to work with a great amount of detail without losing one's perspective.

The thorough outline should dominate the work in all its stages. It is one of the best aids to the author in detecting gaps in the data necessary to a complete and systematic treatment of the subject. Without it the worker is invited to end his problem when his published data end. There is a pronounced tendency for the readily available materials to dominate or determine the scope of the author's work rather than for the author to dominate the scope and plan of his work, unless he works from a carefully constructed outline.

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[2] See also W. C. Schluter, *How to do Research Work* (Prentice-Hall, Inc., New York, 1926), Chap. VI.

If well developed, the outline should appear so obvious in the final work that if the reader chose to outline the finished work he could reproduce the author's own outline. Occasionally in an extremely detailed study it may be advisable to carry the numbering of the outline into the body of the finished work in order to aid the reader in maintaining a clear view of the problem as a whole and to see the constituent parts in their proper relationships.

There is no one best or correct plan for numbering the various elements which compose the outline. Consistency is probably the most important consideration. The numbering suggested below is quite common and acceptable, and if used consistently by the worker will free him from adverse criticism.

I. Relation of the author to . . .
  A. Relation . . .
    1. Relation . . .
      a. Relation . . .
        (1) Relation . . .
          (a) Relation . . .
            i) Relation . . .
            ii) Relation . . .
          (b) Relation . . .
        (2) Relation . . .
      b. Relation . . .
    2. Relation . . .
  B. Relation . . .
II. Relation of the author to . . .

The proper classification of the elements of the problem in order to develop a logical outline should reveal, among other things, what data are qualitative and what quantitative in nature, what must come from libraries and what from field work and other forms of personal contact. Careful attention given to this matter will help materially in delimiting the problem and in determining its availability and will save much time for the worker,

The investigator should acquaint himself with the standard works in the field of his problem

The degree of efficiency manifested by the research worker in building his bibliography and outline depends in a large degree upon his familiarity with the field in which his problem lies, particularly with the standard works therein. If he is not well acquainted with such works he should pause, as soon as he is satisfied that his bibliography contains the chief ones, and acquaint himself with them. He cannot proceed intelligently to a study of the more detailed, specialized, and fugitive materials of his problem until he has done this.

Consultation of standard works, compilation of the bibliography, construction of the outline, and the making of subject notes all proceed apace, but general headway is made along the lines indicated in this outline of procedure.

Systematic note-taking[3]

By the time the research worker has compiled his bibliography he will find it advisable to begin to take subject notes. Nothing is more conducive to efficient work and the saving of time than a properly organized system of note-taking. Most individuals wrestle with this problem for some time before they find a system that is efficient and workable. The discussion below of the principles of note-taking should solve most of the beginner's difficulties.

Subject notes, that is, notes containing data found in the sources of information, should have elasticity. Their form should be such that they may be (1) easily transferred or shifted to meet any changes in the plans or the outline of the collector, and (2) they should be capable of being readily extended or changed whenever additional or changed information requires it. To this end notes should be made on loose slips of paper rather than in note books of fast-bound leaves. The size of the note paper used may be determined somewhat by the nature of the subject and by the handwriting of the individual making the notes. Extensive copyings from archive materials or from books may make it advisable to use large note sheets. Most persons with experience in note-taking have learned that there are practically no cases in which sheets of paper 5 x 8 in size will not prove most satisfactory. Ordinary typewriter paper cut in half is an excellent and simple solution. This plan has many advantages over other sizes and over cards. Each sheet is large enough to permit the recording of a considerable number of facts without cramping the writer; and it is small enough so that it is not too wasteful of paper when single sentences or paragraphs are recorded. They are not as bulky as cards and will fit easily into one's pocket or bag when going to a library. In the final writing of the manuscript, before it is typed, they can be pasted together very easily when arranged in sequential order and when one idea leads into another. Much recopying is saved in this manner. It is not convenient to do this with cards.

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[3] See Earle W. Dow, *Principles of a Note-System for Historical Studies* (The Century Co., New York, 1924).

Some investigators use papers of different colors in note-taking, as for example, white for books, pink for periodicals, yellow for law, and so on. While doubtless a question of taste and preference, it appears to be an unnecessary encumbrance since the citations to authorities will show the nature of the source. Regardless of the color, one size of note paper should be used consistently.

Parts of subject notes. (1) *Subject.* Each subject note, whether brief or extended, simple or complex, should contain but one single point or theme. The theme or subject of the note should be written at the top of the slip where it is seen readily the moment reference is made to the note. This enables the filing of the notes according to the topics of the outline. (2) *Location.* The data noted should be related, as definitely as possible, to the persons or places concerned or affected thereby. This information may be indicated, in some cases, in the statement of subject or source, but if the notes are marked specially to indicate location they can be classified more easily. A convenient place to note this information is the upper left-hand corner of the slip or sheet. Noting the location of data is frequently of considerable importance. For example, notes on a work on public utilities in Spain might be of little if any value in a treatise on public service in the United States, and yet there might not be anything about the externals of the book to indicate its application to conditions in

Spain—its title might be general and it might have been written in English by an American and published in New York. (3) *Time.* The time, whether definite or approximate, when the events recorded occurred is important and should be noted, possibly immediately above or below the notation of location. The publication of the work should not be confused with the date of the data—a century might separate the two dates. (4) *Source.* The source of or authority for the data should be indicated in all cases; if it is doubtful or unknown these facts should be noted. The best place on the slip to note the source is a matter of individual preference, but it is commonly written directly below the "subject" or at the bottom of the card or slip.

Kinds of subject notes. Subject notes are either by the research worker or by someone else and the distinction should be noted carefully. Notes to represent their author may be distinguished from notes to represent another by the omission from the slip or card of any statement of authorship, or by the use of the author's initials in the place assigned for noting the source of the data. If the ideas recorded as the author's are influenced by intellectual association with another, as by a conversation or the reading of a book, a statement to this effect should be made at the close of the note, perhaps in parentheses.

In subject notes to represent another the investigator may wish to quote or to excerpt or even to file in full; the primary purpose, however, is analysis. The analysis may be *constructive,* that is, it may seek to interpret the ideas of the author by going behind the written words and reconstructing the factors that influenced the writer; or it may be of the *abstractive* kind, which may result from eliminating the non-essentials or by condensing the essentials; or it may be *paraphrasing,* representing by equivalent, or restating the matter in clearer or plainer words; or again it may be *selective,* choosing a single point or a succession of points from something longer, preferably in the form of direct quotations with such additional explanatory material as the note-taker may desire.

What type of notes should the worker use: notes to represent another or notes to represent himself? Should he make accurate records of what others have said, thus developing a body of data that must be worked over before it can be used as the worker's own; or should he finish as he goes, that is, enter the note in such a form that he may use it as his own? The first method involves more labor, but the notes so accumulated have more permanent value and they are likely to be more trustworthy. Many sources of information should be read, interpreted, and evaluated in the light of contemporary sources. It follows that the subject notes should represent the authors of the sources in order that the investigator may weigh each against all before he draws his own conclusions. Of course, notes representing personal observation, investigation, or experimentation should represent their author. Notes should be made directly from the sources; they are not likely to be accurate if made from memory some time after the sources were investigated.

Classification and filing of notes. Notes should be classified and filed according to the topics of the outline. In taking notes from the works of one author data may be secured which are applicable to several topics of the outline. A separate slip is used for each note applicable to each topic in the outline. This procedure is followed in the gathering of all the data from the various sources. In the end there will be comments from many authorities filed under each topic of the outline. With all notes completed, the comments of all authorities properly classified and filed topically according to the outline, the problems of the final preparation of the study are greatly simplified.

The worker should consult standard reference books

Just as soon as the worker has made himself familiar with the standard works bearing upon his problem, including the usable parts of their bibliographies, he should use various standard and specialized reference books which will lead him to additional bibliographical data. If he is not familiar with these bibliographical guides he should consult the reference librarian. The most important of them are described in Chapter VIII below.

In most fields there are special bibliographies, many of them unofficial but scholarly in nature, which may lead the researcher to a wealth of material on his subject. A careful examination of books on bibliography should reveal them; if not, the worker should confer with the librarian. Many gaps in one's information may be filled by consulting encyclopedias, almanacs, yearbooks, statistical abstracts, and similar publications. Only experience and the assistance of librarians can make the beginner familiar with them, but the brief description of the leading ones given hereafter in Chapter VIII should be of value to him.

The national government issues a great number and variety of official documents which often furnish the best and most original material available for research in the social sciences. The same is true for the various documents issued by the States. The check-lists of these documents should be checked carefully to discover all official documentary material bearing upon the subject treated.

The use of special libraries

After completing the preceding steps in the general library the investigator may find it necessary to consult special libraries. No special library should present any difficulty save a law library, which involves a procedure peculiar to it. For this reason Chapter IX below is devoted to the use of the law library. Research workers in the social sciences are led to the law library sooner or later, and unless they know how to use law books they are tremendously handicapped in dealing with the legal aspects of their problems. Workers in the social sciences should not overlook available legislative and municipal reference libraries. These libraries are likely to contain exceptional collections of local materials, collected and classified by persons having special knowledge of such materials. Usually the persons in charge of these libraries are not mere bibliographers; they are experts in the field covered by their collections and should be consulted by the worker in regard to any matter pertaining to their special interest.

Gathering data outside of libraries

After completing a survey of the documents available in general and special libraries the research worker may discover that he has many gaps in his knowledge which require additional information. In general, he may secure the necessary data in any or all of the following ways: (1) by observation not involving experiment, (2) by experiment, (3) by questions through interviews, letters, or questionnaires, (4) by field work, using the case or sampling method, or (5) by field work using the census system. These research methods are discussed in Chapter X below.

The investigator should understand that these methods should not be used until all the preceding steps have been taken, and until all materials secured by those steps have been thoroughly digested. Any other procedure is a waste of time. No investigator can be certain of what has or has not been done until all published materials have been surveyed. He should realize, also, that his difficulties have been multiplied greatly when he finds himself compelled to go outside of library collections to secure the necessary information to fill the gaps in his data.

CHAPTER VIII

THE USE OF A GENERAL LIBRARY

A. LIBRARY CATALOG [1]

Libraries are workshops and books are tools of the scholar. An efficient worker must know his tools.

The majority of historical documents are now preserved in public institutions called archives, libraries, and museums. Some still remain in private collections, but sooner or later they find their way into public institutions where they are available to the investigator. Furthermore, a very considerable number of these documents have been copied and given fairly general distribution, thus greatly increasing their availability. Unfortunately, we do not have uniform or complete descriptive catalogs and indexes of existing public collections, although the library fraternity is working toward that end. Uncataloged collections are of no value to researchers who do not have the leisure to work through them for themselves, unless their contents are familiar to the functionaries in charge of them and these persons will supply the necessary catalog information. If the data which the scholar is seeking are to be found in imperfectly classified collections, too much valuable time and energy is required for material searches before the more intellectual and creative work can be undertaken. This condition of the source materials acts as a powerful deterrent to scholarship, for few will give themselves to research when the results are rendered in advance so uncertain.

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[1] On the use of books and libraries, see Margaret Hutchins, Alice Sarah Johnson, and Margaret Stuart Williams, *Guide to the Use of Libraries* (H. W. Wilson, New York, 1925), 3d ed.; William C. Berwick Sayers, *A Manual of Classification for Librarians and Bibliographers* (Grafton & Co., London, 1926); Ernest Cushing Richardson, *Classification* (Charles Scribner's Sons, New York, 1912); *British Museum, Department of Printed Books, Rules for Compiling the Catalogues* (London, 1927); William Warner Bishop, *Practical Handbook of Modern Library Cataloguing* (Williams, Baltimore, 1924), 2d ed., reprint 1927.

The materials for research are being made more available in a number of ways: unclassified collections are being scientifically cataloged; governments and learned societies are employing experts to go from place to place cataloging documents and other materials relating to particular subjects; and now catalogs of catalogs are being constructed—descriptive lists of all the catalogs in existence.

General library equipment and methods are sufficiently similar for some useful generalizations on the subject. A library has three lists of its books, an *accession list,* the *shelf list* and the *public catalog.* The accession list is a record of all the important data relative to the acquisition of the books and is made for the information of the library staff and not for the use of the reader.

The shelf list

The shelf list is to the library what a table of contents is to a book. Each title in the library is represented in the shelf list by a card, and the cards are arranged in the order in which the

Shelf list card

658
F638h Fletcher, William Leroy, 1890—
How to get the job you want, by William L. Fletcher. Boston and New York, Houghton Mifflin company, 1922.

E17087

Explanation: 658 F638h—call number. E17087—accession number, the E indicates that it belongs to the department of Education.

books are placed on the shelves, that is, according to their call numbers. Each card in this list should contain the name of the author, the title, the number of volumes (if more than one), the imprint date or date of publication, the copyright date if different from the imprint date, the call number (the number which indicates to the library worker the place where the book may be found on the shelves), and the accession number (the number indicating the order of the addition of the volume to the library collection). The shelf list will also indicate the department to which the book belongs and the number of copies in the library. The shelf list is primarily for the use of the library staff and is, therefore, not a part of the general public catalog but is kept in the catalog department of the library. This list is in the nature of an inventory, giving a complete history of each book in the library.

The public catalog

The public catalog is the reader's guide to the use of the books, and it should be consulted as the first step in developing a bibliography on any problem to be investigated. Library books may be cataloged or listed in a number of ways. The list may be in manuscript or ledger style; it may be printed in sheaf or loose-leaf style; or it may be a card catalog. The card catalog is in almost universal use in America. Its greater flexibility, in making the record and in its use, makes it preferable to the other forms, even if it is more expensive.

There are three types of public catalogs (as distinguished from the catalogs used primarily by the library staff, such as accession and shelf lists and book lists used by the order department) in use in American libraries: the Dictionary Catalog, the Class (or Classed or Classified) Catalog, and the Alphabetic-Classed Catalog. In the Dictionary Catalog, which is the most generally used, all author, title, and subject entries are arranged in one alphabet, as in a dictionary or encyclopedia. Cutter's rules for the arrangement of a dictionary catalog are followed by most American libraries.[2] A Class (Classed or Classified) Catalog is similar to the shelf list, except that the latter ordinarily does not contain

[2] Charles A. Cutter, *Rules for a Dictionary Catalog* (Government Printing Office, Washington, 1904), 4th ed.

the cross references found in the former. In the usual shelf list each title is entered just once, under the class to which it is assigned, while in a Class Catalog it is entered under all classes in which it logically may be classified. In the Alphabetic-Classed Catalog titles are arranged alphabetically under the headings of large classes of books, whereas in the Classed Catalog they are arranged alphabetically under the last or final sub-divisions of the class. It differs from the Dictionary Catalog in that it is an alphabetic grouping of titles by class rather than by specific subject. The following discussion relates specifically to a Dictionary Catalog.

The card catalog is the index to the library collection. Each book may be represented in the catalog by three cards: an author card,[a] a title card,[b] and a subject card.[c] An author card is made for every book; a title card, if the title is distinctive; and a subject card for every book having an important subject. The subject card may be for the entire book,[c] for a part of the book,[d] for biography,[e] for criticism,[f] or for a bibliography.[g] In addition to the above cards, catalog cards are made with the names of editors,[h] compilers,[i] translators,[j] and series[k] as headings. Also, cross reference cards[l] and guide cards are usually inserted in the card catalog for the convenience of the user. Cross reference cards indicate other subject titles under which a book or books of a similar subject matter may be found; or they may refer from an author's pseudonym or nom-de-plume to his real name, under which his works are listed.[m] Guide cards, having words or letters printed on projecting labels, are inserted at short distances to help to find a heading quickly.

All cards are filed together and alphabetically by their headings. However, the library alphabet is not strictly alphabetical as in an encyclopedia. The following exceptions are fairly common: (1) The alphabetization is word by word rather than letter by letter, words beginning with *New* come before words beginning *Newa-* (*New Jersey* before *Newark*). (2) If there are several authors' names that are alike, such as *John Brown*, they are filed chronologically according to the dates of their lives. (3) If the same word appears as the name of a person as author or subject (John Rye), as the name of a place as author or subject (Rye, New York), and as the name of a thing as subject (rye, a grain) the rule of thumb used by most libraries is to file according to *person, place, subject.* However, there is no universal model for library catalogs and the researcher should familiarize himself with the characteristics of the ones he uses.

The cards may be typed or written, but an increasing number of libraries are now buying the cards printed and sold in duplicate by leading libraries, especially those sold by the Library of Congress.[3] The Library of Congress, however, prints cards only for the titles in its own collection, and it is necessary, therefore, for other libraries to make their own cards for titles not in the Library of Congress.

The entry on a catalog card should contain: (1) a call number, usually written in the upper left-hand corner; (2) the name of the author, usually the main entry; (3) the title of the work, and (4) the imprint, or facts of publication, constituting together the third section of the card; (5) the collation, or numbers of volumes, pages, and illustrations, and size; (6) the series or analytical note immediately following the collation; (7) a contents note, descriptive and analytical; and (8) a record, or "tracing," of all additional cards made.

Call numbers

A book in a library has a group of symbols printed on the back and on the inside cover, known as the "call number." It consists of two parts, a class or classification number and a book number. This number assigns to the book a definite place on the shelves, and it is the device by which the book is referred to in the library records and by which it is found and replaced on the shelves. A *q* or *f* placed before the call number indicates that the book is of quarto or folio size and thus calls for special size shelves.[4]

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[3] See sample (a) below.

[4] Books are designated as folio (fol.), quarto (4 to), octavo (8 vo), duodecimo (12 mo), sexto decimo (16 mo), tricesimo secundo (32 mo), and sexagesimo (64 mo). These terms indicate the number of times a sheet of paper has been folded to form a single section of the book. *Folio* means that the sheet has been folded once to make two leaves and four pages; *quarto,* the sheet has been folded twice to make four leaves and eight pages; *octavo,* the sheet has been folded three times to make eight leaves and sixteen pages; *sexto decimo,* the sheet has been folded four times to make sixteen leaves

Most persons who use books in libraries have no interest in these call numbers other than to copy them correctly on the call slips. The call numbers are important, however, to the research worker who may wish to take stock of the resources of the library in respect to the subject which he is investigating, and who may wish to work "in the stacks" where he has direct access to the books on the shelves.

Systems of classification and classification numbers

The classification number, usually the first part of the call number, indicates the subject of the book. It may consist of numerals, letters of the alphabet, or other symbols, depending upon the system of classification adopted.

There are three systems of classification in common use in our general libraries: the Decimal Classification, worked out by Melvil Dewey; the Expansive or Cutter Classification, originated by Charles A. Cutter; and the Library of Congress Classification. These systems differ in the grouping of the various subjects and in the symbols or system of notation used. It is common practice to combine partly or to modify these systems to fit the requirements of individual libraries or librarians.

Obviously the system of classification adopted for a given collection depends upon the use to which that collection is to be put. A book dealer might arrange his books alphabetically as to their authors or publishers; a collector of old books as to their date of printing; a publisher as to their style of type, and so on. Libraries for general use, however, classify their books according to their subject matter. Most books fall, logically, into but one of the subject divisions into which human knowledge is classified, but many of them may be grouped equally well with one of several of these divisions. Books of the latter kind should be classified so as to make them available to the greatest number of persons using the particular collection.

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and thirty-two pages; *tricesimo secundo,* the sheet has been folded five times to make thirty-two leaves and sixty-four pages; *sexagesimo quarto,* the sheet has been folded six times to make sixty-four leaves and one hundred twenty-eight pages. See Ronald B. McKerrow, *An Introduction to Bibliography* (Oxford University Press, Oxford, England, 1927), Pt. II, Chap. II.

The Decimal or Dewey Classification[5]

The Decimal or Dewey Classification, the system most commonly used, divides the field of knowledge into ten classes and assigns a number to each. Each class is divided into nine divisions, and each division subdivided into nine sections. If further division of a subject is necessary a decimal point is added for each division. The main classes and the subdivision of one class, Sociology (300), follow:

000 General works
100 Philosophy
200 Religion
300 Sociology
400 Philology
500 Natural science
600 Useful arts
700 Fine arts
800 Literature
900 History. Biography. Geography. Travel

300 Sociology
  310 Statistics
  320 Political science
  330 Political economy
  340 Law
  350 Administration
  360 Associations and institutions
  370 Education
  380 Commerce. Communication
  390 Customs. Costumes. Folklore

310 Statistics
  311 Theory. Methods
  312 Population
  313 Special topics
  314 Europe
  315 Asia
  316 Africa
  317 North America
  318 South America
  319 Oceanica

The Expansive or Cutter Classification[6]

The Expansive or Cutter Classification uses the letters of the alphabet for its notation, except that for his geographical classes Cutter uses what he calls the *Local List*, and this is numerical.

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[5] Melvil Dewey, *Decimal Classification and Relative Index for Libraries and Personal Use* (Forest Press, Lake Placid Club, New York, 1927), 12th ed.

[6] C. A. Cutter, *Expansive Classification* (C. A. Cutter, Boston, 1891-1893), Pt. I, "The First Six Classifications"; W. P. Cutter (Ed.), "Seventh Scheme," *Transactions and Proceedings of the Second International Library Conference* (London, 1897), pp. 84-88.

Cutter proposed seven separate classifications. The first is very broad or elementary and is intended for a small collection; the second, third, and so on, are progressively more complex, expanded to fit the requirements of libraries of increasing or varying size, the seventh classification being considered adequate for a collection of several million copies. Hence the Cutter Classification is called the Expansive System. The main divisions under the fifth classification (the four preceding classifications did not embrace the entire alphabet) are:

A General Works
B Philosophy
C Judaism and Christianity
D Ecclesiastical History
E Biography
F History
G Geography and Travels
H Social Sciences
I Sociology
J Civics. Government. Political Science
K Legislation. Law. Women. Societies
L Sciences and Arts
M Natural History
N Botany
O Zoology
P Vertebrate
Q Medicine
R Technology. Useful Arts
S Constructive Arts (Engineering and Building)
T Fabricative Arts (Manufactures and Handicrafts)
U Combative and Preservative Arts
V Recreative Arts. Sports. Theater. Music
W Fine Arts
X Philology
Y Literature
Z Book Arts

A *Local List* arbitrarily assigns to every geographical place a number, thus:

30 Europe
39 France
45 England
47 Germany
60 Asia
70 Africa
80 America
83 United States

Therefore, the notation "F 83" stands for the history of the United States.

The Cutter Classification provides for divisions, or common subdivisions, for all the classes represented by the letters of the alphabet. These are numbered from 1 to 9, and are separated from the subject number by a point, as follows:

1—Theory
2—Bibliography
3—Biography
4—History
5—Dictionaries
6—Handbooks
7—Periodicals
8—Societies
9—Collections

F83.2, therefore, denotes bibliography of American history.

The Library of Congress Classification[7]

The notation of the Library of Congress Classification is based to a certain extent upon the earlier Dewey and Cutter systems. The main classes are marked with a single capital letter. (See A, B, C, G, H, K, and so on, below.) Main divisions of classes are indicated by the arbitrary rather than logical addition of another capital letter (VA to VM below), although some of the single-letter topics are, in fact, subdivisions of some general class (E-F are subordinate to D, and J, K, L are subordinate to H). Further subdivision is secured by the use of Arabic numerals, reading arithmetically from 1 to a number of four figures. In addition, special tables are provided for almost every schedule for purposes of minute subdivision. The result is a theoretically unscientific and exceedingly bulky scheme, the printed schedules already running into thousands of pages. However, its very elaborateness is a virtue when applied to a large collection, and, in spite of theoretical objections, it has worked admirably in the Library of Congress. The main divisions of the Classification and the main subdivisions of one class (V Naval Science) are given below.

A General Works. Polygraphy
B Philosophy. Religion
C History. Auxiliary Sciences
D History and Topography (except America)

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[7] Library of Congress, *Classification* (Government Printing Office, Washington, 1901-1928). Also, *Annual Report of the Librarian of Congress,* 1901-1928.

E-F American History
G Geography. Anthropology
H Social Sciences. General
J Political Science
K Law
L Education
M Music
N Fine Arts. General
P Language and Literature
Q Science. General
R Medicine. General
S Agriculture—Plant and Animal Industry
T Technology. General
U Military Science. General
V Naval Science. General
    VA Navies
    VB Administration
    VC Maintenance
    VD Seamen
    VE Marines
    VF Ordinance
    VG Minor services
    VK Navigation
    VM Shipbuilding and marine engineering
Z Bibliography and Library Science

Book number

The book number follows the classification number, and it usually consists of two parts: an author number and a work mark. The book number is the number, letter, or symbol, or combination thereof, used to distinguish an individual book from every other book having the same class number.

The *author number* indicates the name of the author, expressed by the first letter of his surname followed by two or three Arabic numerals. This number is known as the "Cutter number" because the tables from which it is assigned were worked out by C. A. Cutter. These Cutter tables are so "constructed that the names whose initials are followed by some of the *first* letters of the alphabet, have the *first* numbers, and those in which the initials are followed by *later* letters have *later* numbers.

“E.g.,

Garden,	167	Gould,	729
Gerry,	321	Grand,	762
Gibbon,	352	Grate,	915
Glover,	518	Guizot,	949”[8]

The *work mark* “. . . is the part of the book number which indicates the title, edition, etc., of the book. It is useful in distinguishing between different works on the same subject by the same author and in arranging these works under their authors alphabetically by titles (or, as it may happen, in order of first, second, third, etc., editions of the work). It consists usually of the first letter of the first word not an article in the title, or in the case of editions of the edition number.”[9]

Arrangement of books on the shelves

Books are arranged on the shelves from left to right, and from the top shelf down, by their classification numbers in the order of their magnitude. Books with the same classification number are arranged alphabetically by the author letters of the author number, and then decimally by the numbers that follow the letters. Books with the same classification and author numbers are arranged alphabetically by their work marks.

B. REFERENCE BOOKS[10]

Having exhausted the resources of the card catalog in the preliminary work of the investigation, the researcher should exploit that general class of books called *reference books.* These reference books are digests of information, bibliographical or factual, and they cover all the branches of human knowledge. They are books that are not intended to be read through but are meant to be referred to for some definite piece of information. They are invaluable to the investigator. Space will not permit a survey of all the important reference books, but the more general

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[8] C. A. Cutter, *Explanation of the Alphabetic-Order Marks* (Library Bureau, Boston, 1904), 4th ed., pp. 3-4. Also, Hutchins, Johnson, and Williams, *op. cit.*, pp. 24-25.

[9] Hutchins, Johnson, and Williams, *op. cit.*, p. 25.

[10] Very useful works on reference books are Isadore Gilbert Mudge, *Guide to Reference Books* (American Library Association, Chicago, 1929), 5th ed.; Florence May Hopkins, *Reference Guides that Should be Known* (Willard, Detroit, 1923), 3d ed.

[a] Author card Library of Congress Card

658 Fletcher, William Leroy, 1890—
F638h How to get the job you want, by William L. Fletcher.
Boston and New York, Houghton Mifflin company, 1922.

x, (1), 449p. 16½cm. $3.00

Bibliography: p. 358-448.
Advertising matter: p. 449.

1. Applications for position. I. Title.
Library of Congress 22-6010 Revised
——— Copy 2. HF5383.F7
Copyright A654832

Explanation of card: Fletcher, William Leroy—author. 1890 — date of author's birth. How to get the job you want—title of work. Boston and New York — places of publication. Houghton Mifflin Company — publisher. 1922 — date of publication. x — pages numbered with Roman numerals. (1) — a page not numbered. 449p. — pages of text. 16½cm — size of book in centimeters. $3.00 — publisher's price. 1. Applications for position — subject heading used in the Library of Congress. I. Title — a title card in the catalog. 22-6010 Revised — serial number of this catalog card, the order card. Copy 2 — two copies in the Library of Congress. Copyright A654832 — copyright number. HF5383.F7 — Library of Congress call number. 658 F638h — Dewey classification call number, using the Cutter book number. *Analysis of call numbers:* (658 F638h) 6 — Useful art; 5 — commerce-business; 8 — business methods; F638 — Cutter number for Fletcher; h — first letter of title. (HF5383.F7) H — Social sciences; F — Commerce, including business; 5383 — Application for positions; F7 — Author number for Fletcher.

[b] Title card

How to get the job you want.
Fletcher, William Leroy, 1890—
How to get the job you want, by William L. Fletcher. Boston and New York, Houghton Mifflin company, 1922.

• • •

[c] Subject card for the entire book

Applications for position.
Fletcher, William Leroy, 1890—
How to get the job you want, by William L. Fletcher. Boston and New York, Houghton Mifflin company, 1922.

• • •

[d] Subject card for part of a book

Education—China.
Koo, Vi Kyuin Wellington, 1888—
Chinese education.

(In National education association of the United States. Journal of proceedings and addresses, 1916. p. 165-170)

1. Education—China.

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[e] Subject card for bibliography

Byles, Mather, 1707-1788.
Eaton, Arthur Wentworth Hamilton, 1849—
The famous Mather Byles, the noted Boston Tory preacher, poet, and wit, 1707-1788, by Arthur Wentworth Hamilton Eaton. . . . Boston, W. A. Butterfield, 1914.

. . .

[f] Subject card for criticism

Goethe, Johann Wolfgang von, 1749-1832.
Steiner, Rudolf, 1861—
Goethes weltanschauung. Von Rudolf Steiner. Berlin, Anthroposophischer Verlag, 1921.

. . .

[g] Subject card for bibliography

Law—Bibliography.
U. S. *Library of Congress. Law Library.*
. . . The bibliography of international law and continental law, by Edwin M. Borchard, law librarian. Washington, Govt. print. off., 1913.

. . .

1. Bibliography—Bibl.—Law. 2. International law and relations —Bibl. 3. Law—Bibl. I. Borchard, Edwin Montefiore, 1884—

[h] Card for editor

Breed, Lewis Claflin, ed.
Napoleon I, *emperor of the French,* 1769-1821.
The opinions and reflections of Napoleon, edited by Lewis Claflin Breed . . . Boston, The Four seas company, [c1926].

. . .

[i] Card for compiler

Eckman, Lulu L. comp.
U. S. *Children's bureau.*
. . . Laws relating to mothers' pensions in the United States, passed during the years 1920 to 1923, inclusive . . . Washington, Govt. print. off. 1924.

. . .

[j] Card for translator

Payne, Charles Herbert, tr.
Du Jarric, Pierre, 1566-1617.
. . . Akbar and the Jesuits, an account of the Jesuit missions to the court of Akbar, by Father Pierre Du Jarric, S.J. Translated with introduction and notes by C. H. Payne. New York & London, Harper & brothers [1926].

. . .

[k] Series card

National industrial conference board.
Special report.

No. 34 National industrial conference board. Weights and measures. 1926.

[l] Reference card—to related subjects

Police Power, see
Constitutional Law.

[m] Reference card—from pseudonym to author's real name

Twain, Mark, pseud., see
Clemens, Samuel Langhorne.

will be listed, as they have almost universal use. Besides these general guides there are special reference books for the different sciences and branches thereof, as for history, government, economics, geography, sociology, physics, chemistry, literature, fine arts, and so on. The librarian should be consulted for the use of these specialized books.

The more important reference books are periodical and newspaper indexes, encyclopedias and almanacs, dictionaries, gazetteers, atlases, and bibliographies.

Indexes

American Library Association Index. American Library Association Publishing Board. Boston. 1901. 2d ed. *Supplement,* 1900-1910. American Library Association Publishing Board. Chicago. 1914. This is an index to general literature, giving name of author, title, volume and page.

Book Review Digest. H. W. Wilson Co. New York. 1905-1928. Issued monthly, with semi-annual and annual cumulations. Lists the more important books of general interest with references to reviews published about each.

Business Digest. 1917-1920. Cumulative Digest Corporation. New York. 1917-1921. 9 vols. Alphabetical subject index to about 55 business periodicals and to the business articles in 9 to 15 general periodicals. Continued after September, 1921, as *Prentice-Hall Business Digest.* Business Digest, Inc. New York. 1921-1922. Weekly.

Industrial Arts Index. 1913-1927. H. W. Wilson Co. New York. 1913-1928. Annual volumes, supplemented by numbers cumulating during the year, annually, and biennially. An index to business, trade, and engineering periodicals, some United States government publications, and some pamphlets dealing with industrial matters. Material arranged alphabetically by subject. Title of article, name of author if known, abbreviated title of magazine, volume, page, and date given for magazine articles.

Of a similar nature are an *Engineering Index,* 1884-1905, and an *Agricultural Index,* 1916-1928.

Magazine Subject Index. Boston Book Co. Boston. 1908. 1 vol. A subject index to 79 American and English periodicals. Continued since 1908 as the *Annual Magazine Subject Index*. Index to the less familiar publications of societies, not ordinarily included in other indexes. Specializes in history, travel, and the fine arts. The information given includes title, name of author if known, abbreviated title of periodical, volume, page and date. Since 1909 the *Dramatic Index* has been published as part 2 of the *Annual Magazine Subject Index*. The *Bulletin of Bibliography* is a quarterly continuation of the *Dramatic Index*.

Poole's Index to Periodical Literature. 1802-1881. Houghton Mifflin Co. Boston. 1893. Rev. ed. 1 vol. in 2 pts. Five supplements, 1882-1907. Houghton Mifflin Co. Boston. 1888-1908. An index to 470 American and English periodicals of the 19th century, giving title of article, name of author if known, abbreviated title of periodical, volume and page. Discontinued.

There is an abridged edition of *Poole's Index* in two volumes, indexing 37 of the most generally used periodicals from their beginning through 1904. Houghton Mifflin Co. Boston. 1901 and 1905.

Public Affairs Information Service. Public Affairs Information Service. New York. 1915-1928. Weekly, cumulated bimonthly and annually. Indexes books, government documents, society publications, and periodicals for subjects in political science, economics, commerce, and finance.

Readers' Guide to Periodical Literature. 1900-1928. H. W. Wilson Co. New York. 1905-1929. 5 vols. 1900-1924. Monthly, cumulating quarterly and annually. An index to general magazines, reports of associations, and some United States documents. Material arranged alphabetically by author and subject, sometimes by title, with cross references. Title of article, name of author if known, abbreviated title of magazine, volume and page, and date are given for magazine articles.

There is a *Supplement* to the *Readers' Guide*, 1907-1919. H. W. Wilson Co. New York. 1916-1920. The *Supplement* was changed in 1920 to *International Index to Periodicals*, 1920-1927. H. W. Wilson Co. New York. 1921-1929. Numbers cumulate during the year and annually. Indexes the more special American and foreign periodicals not indexed in *Readers' Guide*. Arrangement of information similar to *Readers' Guide*.

Royal Society of London. *Catalogue of Scientific Papers.* 1800-1900. Clay. London. 1867-1902. Cambridge University Press. England. 1914-1921. 17 vols. To be completed in 21 vols. Author index to 1,555 periodicals and transactions in various languages.

Royal Society of London. *Catalogue of Scientific Papers.* 1800-1900. Cambridge University Press. England. 3 vols. in 4. Subject index to the same material as the author catalog.

New York Times Index. New York Times. New York. 1913-1929. A quarterly subject index to current events recorded in the *Times,* giving exact references to date, page, and column.

New York Tribune Index. 1875-1906. Discontinued.

London Times, *Official Index.* 1906-1927. Annual.

Encyclopedias, annual cyclopedias, almanacs, yearbooks

Encyclopedias either attempt to treat the whole field of human knowledge or they deal exhaustively with one subject. The information is in the form of alphabetically arranged articles of varying length. Annual cyclopedias and almanacs present annually up-to-date information and statistics on political, economic, social, scientific, and other problems. Important comprehensive encyclopedias are:

American Almanac and Repository of Useful Knowledge. 1830-1862. Boston. 1830-1862. 33 vols.

American Almanac and Treasury of Facts, Statistical, Financial, and Political. 1878-1889. Edited by A. R. Spofford. New York. 1878-1889. A standard statistical compendium while published.

American Annual Cyclopedia and Register of Important Events. 1861-1874. New York. 1862-1875. 14 vols.

Appleton's Annual Cyclopedia. 1861-1902. D. Appleton & Co. New York. 1863-1903. 3 series, 42 vols. Published originally as an annual supplement to the *American Cyclopedia.*

Appleton's Cyclopedia of American Biography. D. Appleton & Co. New York. 1888-1900. 7 vols.

Brockhaus' Konversations—Lexikon. Brockhaus. Leipzig. 1892-1895. 14 aufl. 17 vols. Reprinted 1920.

Cyclopedia of American Government. D. Appleton & Co. New York. 1914. 3 vols.

Dictionary of National Biography. The Macmillan Company. New York. 1885-1900. 63 vols. 2 supplements, 1901 and 1912. 6 vols. Index and epitome, 1903 and 1913.

Diccionario Enciclopedico Hispano-Americano de Literatura, Ciencias y Artes. Montaner y Simon. Barcelona. 1887-1910. 28 vols. in 29.

Encyclopedia Americana. Encyclopedia Americana Corporation. New York. 1918-1920. Reissued and slightly revised in 1922. 30 vols.

Encyclopedia Britannica. Encyclopedia Britannica, Inc. New York. 1929. 14th ed. 24 vols. Complete revision.

Harper's Encyclopedia of United States History. 1458 A.D. to 1912. Harper & Brothers. New York. 1912. Rev. ed. 10 vols.

La Grande Encyclopédie. Lamirault. Paris. 1886-1902. 31 vols. Perhaps the most important of the French encyclopedias.

Lalor, John Joseph. *Cyclopedia of Political Science, Political Economy and of the Political History of the United States.* Rand. Chicago. 1882-1884. 3 vols.

Larousse, Pierre Althanase. *Grand Dictionnaire Universel.* Larousse. Paris. 1866-1890. 17 vols.

Meyers Grasses Konversations-Lexikon. Bibliographisches Institut. Leipzig. 1902-1912. 24 vols.

National Cyclopedia of American Biography. White. New York. 1893-1921. 17 vols.

New International Encyclopedia. Dodd, Mead & Co. New York. 1914-1916. 2d ed. 24 vols. 24th volume contains courses of study and reading. Reissued and slightly revised, 1922. 24 vols. *Supplement,* 1925. 2 vols.

Nuova Enciclopedia Italiana. Unione Tipografico-Editrice Torinese. Torino. 1875-1888. 6th ed. 25 vols. in 26. *Supplemento,* 1889-1899. 5 vols. in 6.

Some important annual cyclopedias, almanacs, and yearbooks are the following:

Americana Annual. Encyclopedia Americana Corporation. New York. 1923-1927. Annual supplement to *Encyclopedia Americana.*

American Year Book. 1910-1919, 1925-1928. D. Appleton & Co. New York. 1911-1920. The Macmillan Company. New York.

1927. Doubleday, Doran and Co. New York. 1928. American Year Book Corporation. New York. 1929. Annual. No volumes, 1920-1924.

Annual Register. 1758-1927. London. 1761-1928. Annual.

New International Year Book. Dodd, Mead & Co. New York. 1907. This is an annual supplement to the *New International Encyclopedia.*

Statesman's Year-Book. 1864-1928. The Macmillan Company. London and New York. 1864-1928. The most useful of the yearbooks.

Statistical Abstract of the United States. Bureau of Statistics, Department of Commerce and Labor. Washington. 1878-1928. Government Printing Office. Washington. 1879-1928. Annual.

Whitaker, Joseph. *Almanack.* 1869-1928. Whitaker. London. 1869-1928. Annual.

World Almanac and Book of Facts. 1868-1929. World. New York. 1868-1929.

Bibliographies

A bibliography may be a classified list of the literature on any subject, or on some aspect of a subject, or it may attempt to cover all subjects. There are bibliographies of history, literature, education, and so on. Some important general American bibliographies are given here. For foreign bibliographies and for bibliographies in special fields see Van Hoesen and Walter, *Bibliography*, pp. 477-484, listed below.

A General Catalogue of Books. Philip Allan & Co., Ltd. London. 1928. 3 vols. An English catalogue.

American Catalogue of Books. 1876-1910. Publishers' Weekly. New York. 1881-1911. 9 vols.

American Library Association Catalog. Government Printing Office. Washington. 1904. A list of 7,520 books. A *Supplement* (American Library Association Publishing Board, Chicago, 1912) gives a list of 3000 titles for a popular library.

Booklist, a Guide to the Best New Books. 1905-1922. American Library Association Publishing Board. Chicago. 1905-1922. 18 vols.

De Ricci, Seymour. *Book Collector's Guide; a Practical Hand-*

book of British and American Bibliography. Rosenbach. Philadelphia. 1921.

Ford, Paul Leicester. *Check List of Bibliographies . . . of American Books and Subjects.* Brooklyn. 1889.

Kelly, James. *American Catalogue of Books Published in the United States from January 1861 to January 1871.* Wiley. New York. 1866-1871. 2 vols. Continues the record of *Bibliotheca Americana* giving similar information. (See Roorbach, Orville Augustus, below.)

Publishers' Trade List Annual. New York. 1873-1928.

Publishers' Weekly. New York. 1872-1928. Preceded by *Trade Circular and Publishers' Bulletin* (1861-1871); *American Library Gazette* (1855-1872); and *Norton's Literary Advertiser* (1851-1855). Quarterly index.

Roorbach, Orville Augustus. *Bibliotheca Americana.* 1820-1861. Roorbach. New York. 1852-1861. 4 vols. A catalog of American publications for the period indicated, arranged alphabetically by author and title, giving publisher, date, size, price.

Sonnenschein, William S. *The Best Books.* G. P. Putnam's Sons. New York. 1910-1913. 3d ed. Two parts; to be completed in three parts. A guide to about 100,000 of the best available books in art, science, and literature, giving dates of first and last editions, price, size, and publisher's name.

Standard Catalog Series. H. W. Wilson Co. New York. 1924-1928. Supplemented by *Standard Catalog Bimonthly.*

United States Catalog and Cumulative Book Index. H. W. Wilson Co. New York. 1900. 2d ed., 1906; 3d ed., 1912; 4th ed. 1928. The United States Catalog (1912) lists all books in print in the United States on January 1, 1912; and three Supplements (1918, 1921, 1924) list all books published from 1912 to June, 1924. Books are arranged alphabetically under author, subject, and title, with name of publisher and price. The annual *Cumulative Book Index,* 1898-1928, supplements the United States Catalog, keeping it up to date.

United States Copyright Office. *Catalogue of Copyright Entries.* Washington. 1891-1928.

Van Hoesen, Henry Bartlett and Frank Keller Walter, *Bibliography; Practical, Enumerative, Historical.* Charles Scrib-

ner's Sons. New York. 1928. Contains an extensive bibliographical appendix, a classified bibliography of bibliographies.

Wilson Co., H. W. *Quarter Century of Cumulative Bibliography.* New York. 1923.

Government publications—General

Childs, James Bennett. *Account of Government Document Bibliography.* Government Printing Office. Washington. 1927.

League of Nations. *Handbook of International Organizations.* Geneva. 1926.

League of Nations. *Publications Issued.* Geneva. 1924.

League of Nations. *Subject List of Documents Distributed.* Geneva. 1923.

List of the Serial Publications of Foreign Governments. In preparation. Auspices of American Council of Learned Societies, American Library Association, National Research Council, and Laura Spelman Rockefeller Memorial. Ed. comm., J. T. Gerould, H. H. B. Meyer, and M. M. Lydenberg.

Government publications—United States

The Government Printing Office in Washington issues a large number and variety of public documents, the most important of which are:

Congressional Record. The verbatim record of the debates and other proceedings of Congress since 1789 to date is found in the following documents.

(1) *Annals of Congress.* 1789-1824. 42 vols.
(2) *Register of Debates in Congress.* 1824-1837. 29 vols.
(3) *Congressional Globe.* 1833-1873. 109 vols.
(4) *Congressional Record.* 1873-date.

Congressional Edition or Serial Set comprising the

(1) *Journals,* or minutes of the proceedings of Congress,
(2) *Reports* of the committees of the Senate and House, and
(3) *Documents,* being chiefly reports of the executive departments of the national government.

Most of the government publications may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C., at cost; many of them are free.

The following lists of and keys to the United States public documents are useful:

Ames, John Griffith. *Comprehensive Index to the Publications of the United States Government.* 1881-1893. Government Printing Office. Washington. 1905. 2 vols. Covers Congressional and department publications arranged by subject.

Clarke, Edith Emily. *Guide to the Use of United States Government Publications.* Faxon. Boston. 1918.

Poore, Benjamin Perley. *Descriptive Catalog of the Government Publications of the United States, September 5, 1774-March 4, 1881.* Government Printing Office. Washington. 1885. Includes all government publications for the years covered. Chronological arrangement.

Schmeckebier, Lawrence. *Statistical Work of the National Government.* Institute of Government Research in Administration. The Johns Hopkins Press. Baltimore, Md. 1925. Government documents listed under topics. A valuable guide to the use of government documents.

Swanton, Walter Irving. *Guide to United States Government Publications.* Government Printing Office. Washington. 1918.

U. S. Superintendent of Documents. *Catalog of the Public Documents of . . . Congress and of all the Departments of the Government of the United States.* Government Printing Office. Washington. 1896-1922. 13 vols. Commonly known as the *Document Catalog.* This is the "Comprehensive Index" since 1893. Issued biennially, one volume for each Congress. Arranged alphabetically by author and subject.

U. S. Superintendent of Documents. *Check List of United States Public Documents.* 1789-1909. Government Printing Office. Washington. 1911. 3d ed. This is a check-list to the Congressional Edition or Serial Set.

U. S. Superintendent of Documents. *Index to the Reports and Documents of . . . Congress.* Government Printing Office. Washington. 1897-1924. 34 vols. Usually called the *Document Index.* This is the "Consolidated Index," 1895-1924. Indexes only the Congressional Edition. Arrangement by author and subject.

U. S. Superintendent of Documents. *Monthly Catalog United States Public Documents.* 1895-1928. Government Printing Office. Washington.

U. S. Superintendent of Documents. *Price Lists of Government Publications.* Government Printing Office. Washington. 1898-1928.

U. S. Superintendent of Documents. *Tables of and Annotated Index to the Congressional Series of United States Public Documents.* 1817-1893. Government Printing Office. Washington. 1902.

Important State and municipal bibliographies are:

Bates, Frank Greene. "Municipal Ordinances and Documents." In *Special Libraries.* 1914. Vol. VI, pp. 11-20.

Bowker, Richard Rogers. "State Publications; a Provisional List." In *Publishers Weekly.* 1899-1909. Vol. IV.

Hasse, Adelaide Rosalie. *Index to Economic Material in Documents of the States of the United States.* Carnegie Institute. Washington. 1907-1921. 13 vols.

Morrison, Hugh Alexander. "Bibliography of the Official Publications of the Confederate States." In *Bibliographical Society of America. Proceedings.* 1909. Vol. III, pp. 92-132.

Reece, Ernest James. *State Documents for Libraries.* Illinois University Bulletin. Urbana. 1915. Vol. XII, No. 36.

Shearer, Augustus Hunt. *List of Documentary Material . . . State Constitutional Conventions.* 1776-1912. Newberry Library Bulletin. No. IV. Chicago. 1915.

Government publications—Foreign

Austria. Staatsdruckerei. *Katalog des Verlages.* Wien. 1925.

Canada. Department of Public Printing and Stationery. *Price List of Government Publications.* Ottawa. 1926-1928. Monthly Supplement. 1928-1929.

Welling, Beatrice W. *Canadian Federal Documents.* American Library Association Bulletin. 1925. Vol. XIX, pp. 385-390.

Germany. Reichstag. Bibliothek. *Katalog.* Trowitzsch. Berlin. 1890-1899. 5 vols. Later supplements.

Great Britain. Parliament. House of Commons. *General Alphabetical Index to the Bills, Reports, Estimates, Accounts, . . .*

Papers. 1801-1919. London. 1853-1926. Continued by the following:

Great Britain. *Lists of the Bills, Reports, Estimates and Accounts and Papers.* 1920-1926. London. 1920-1927. Annual.

Great Britain. House of Lords. *General Index to Sessional Papers.* 1801-1855. London. 1860-1886. Annual indexes since 1885.

Great Britain. *Monthly* [*and Quarterly*] *List of Parliamentary Publications.* London. 1915-1921. Continued after 1921 by the *Consolidated List* below.

Great Britain. *Monthly* [*and Quarterly*] *List of Official Publications.* London. 1916-1921. Continued after 1921 by the *Consolidated List* below.

Great Britain. *Consolidated List of Government Publications.* London. 1922-1928. Monthly and current.

Great Britain. Scargill-Bird, *A Guide to the Principal Classes of Documents Preserved in the Public Record Office.* Eyre and Spottiswoode. London. 1896. 2d ed.

Italy. Ministero delle finance. *Pubblicazioni edite dallo stato o col suo concorso.* 1861-1923. Libreria dello stato. Roma. 1924.

Paris. Imprimerie Nationale. *Catalogue des Publications Mises en Vente.* Paris. 1926.

CHAPTER IX

THE USE OF A LAW LIBRARY

A. LEGAL BIBLIOGRAPHIES AND GUIDES[1]

In searching for the law there are a number of legal bibliographies and guides which the investigator should consult, some of the leading ones being the following:

Legal bibliography—General

Calhoun, George M. and Catherine Delamere, *A Working Bibliography of Greek Law.* Harvard University Press. Cambridge. 1927.

Catalogue of the Library of the Department of Justice to September 1, 1904. By James A. Finch, Librarian. Government Printing Office. Washington. 1904.

Catalogue of the Library of the Association of the Bar of the City of New York. New York. 1892.

Catalogue of the Library of the Law School of Harvard University. Cambridge, Massachusetts. 1909. 2 vols. Covers only books on American and English common law.

Crawford, Clarence C. *A Guide to the Study of the History of English Law and Procedure.* The Carswell Company, Ltd. Toronto. 1923.

Fox, J. C. *A Handbook of English Law Reports, 1776-1865.* Butterworth & Co. London. 1913. Pt. I. Covers reports of the House of Lords, the Privy Council, and the Chancery. A proposed Pt. II has not been published.

Index Catalogue of the Library of the Chicago Law Institute

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[1] For very excellent legal bibliographies, see Frederick C. Hicks, *Materials and Methods of Legal Research* (Cooperative Publishing Company, Rochester, New York, 1923), Appendix I; for British law reports see Appendix IV; for American reports see Appendix V; for Anglo-American legal periodicals see Appendix VI. Also, Donald J. Kiser, *Principles and Practice of Legal Research* (American Law Book Company, Brooklyn, New York, 1924), 2d ed., Vol. I, pp. 158-181.

to December 31, 1901. Chicago Law Institute. Chicago. 1902. Supplemented by a *Subject Index,* 1902-1927. Lists all the substantive law received by the library since the catalog of 1902.

Journal of the International Institute of Legal Bibliography. American edition. Ed. by Edwin M. Borchard. Known as *Bibliography of Legal Science.*

Marvin, J. G. *Legal Bibliography, or a Thesaurus of American, English, Irish, and Scottish Law Books.* T. & J. W. Johnson. Philadelphia. 1847. Includes the "Titles of American and most of the English, Irish, and Scotch Law Books, from the earliest period to 1847, together with such Continental Treatises as are generally referred to by the Bench and Bar in England and the United States."

Maxwell, W. Harold (Comp.). *A Bibliography of English Law to 1650.* Sweet & Maxwell, Ltd. London. 1925. 1 vol. Two volumes in preparation: one containing law books published between 1650 and 1801, the other to cover the eighteenth and nineteenth centuries.

Monthly Catalogue. United States Public Documents. Issued by the Superintendent of Public Documents. Government Printing Office. Washington.

Muhlbrecht, Otto. *Wegweiser durch die neuere Litterature der Rechts- und Staatswissenschaften für die Praxis bearbeitet.* Berlin. 1893-1901. 2d ed. 2 vols. Very comprehensive. Continued by the work directly following.

Muhlbrecht, Otto. *Uebersicht der gesammten Staats- und Rechts Wissenschaftlichen Litterature.* Berlin. 1900-1928.

Soule, Charles C. *The Lawyers Reference Manual of Law Books and Citations.* Charles C. Soule. Boston. 1884.

Sweet and Maxwell's Guide to the Law Reports and Statutes. The Carswell Company, Ltd. Toronto. 1929. An alphabetical list of English and Irish law reports.

U. S. Library of Congress. *Monthly List of State Publications.* Government Printing Office. Washington.

Wallace, John William. *The Reporters.* Soule and Bugbee. Boston. 1882. 4th ed. Covers English, Scotch, Irish, and American reports.

Legal bibliography—Periodicals

"Annual Index to Legal Articles." November, 1901-April, 1908. In *Harvard Law Review*. Vols. XV-XXI. Discontinued.

"Check-List and Index to Current Legal Literature." In *New York University Law Quarterly Review*. First issue, September, 1929. Quarterly. In two parts: (1) Legal Periodicals; (2) Books and Monographs. A comprehensive list.

Index to Legal Periodical Literature. Vols. I, II, 1888-1899, ed. by Leonard A. Jones. Boston Book Co. Boston. Vol. III, 1898-1908, ed. by Frank E. Chipman. Boston Book Co. Boston. Vol. IV, 1908-1922, ed. by Frank E. Chipman. Chipman Law Publishing Co. Boston. [Vol. V, 1922-1927, ed. by Frank E. Chipman. Commerce Clearing House, Inc. New York, Chicago, Washington. This volume is not part of the above series. See *Index to Legal Periodicals and Law Journal* below.]

Index to Legal Periodicals and Law Library Journal. 1908-1928. H. W. Wilson. New York. 1909-1928. Quarterly lists cumulated annually. Plans have been projected by the American Association of Law Libraries to cumulate this *Index* every three years as continuation volumes of the *Index to Legal Periodical Literature* (cited above), the first of these new volumes to begin with 1922, where Vol. IV left off.

"Index to Periodicals." In *Green Bag*. Monthly. Discontinued.

"Index to Recent Literature—Books and Periodicals." In *American Political Science Review*. Quarterly.

Legal Periodical Digest. Commerce Clearing House, Inc. New York, Chicago, Washington. 1928-1929. Monthly loose-leaf sheets cumulated annually. Brief digests are made by some member of the editorial staff of each of the leading law journals.

Legal bibliography—Guides on how to find the law

Andrews, James D. "The Use of the Law Library," *Law Library Journal*. April, 1909, pp. 8-19.

Brumbaugh, Jesse Franklin. *Legal Reasoning and Briefing*. Bobbs-Merrill Company. Indianapolis. 1917.

Childs, Frank Hall. *Where and How to Find the Law*. La Salle Extension University. Chicago. 1923.

Cooley, Roger W. (Ed.) *Brief Making and the Use of Law Books.* West Publishing Company. St. Paul. 1926. 5th ed.

Hicks, Frederick C. *Aids to the Study and Use of Law Books.* Baker, Voorhis and Company. New York. 1913.

Hicks, Frederick C. *Materials and Methods of Legal Research.* Lawyers Cooperative Publishing Company. Rochester, New York. 1923.

Law Books and Their Use. Lawyers Cooperative Publishing Company. Rochester, New York. 1925. 3d ed.

Kiser, Donald J. *Principles and Practice of Legal Research.* American Law Book Company. Brooklyn, New York. 1924. 2d ed. 2 vols.

Townes, John C. *Law Books and How to Use Them.* Austin Publishing Company. Austin, Texas. 1909.

Wambaugh, Eugene. *The Study of Cases.* Little, Brown and Company. Boston. 1894. 2d ed.

Woodruff, Edwin H. "How and Where to Find the Law." In his *Introduction to the Study of Law.* Baker, Voorhis and Company. New York. 1898.

B. WHAT IS THE LAW?

Definition of law

"A law, in the proper sense of the term," says Thomas Erskine Holland, "is . . . a general rule of human action, taking cognizance only of external acts, enforced by a determinate authority, which authority is human, and among human authorities, is that which is paramount in a political society."[2] Another legal authority has said: "Law as it exists in the modern community may be . . . defined as the sum total of all those rules of conduct for which there is state sanction."[3] A more practical definition from the standpoint of the law searcher is the following: "Law is the effort of society to protect *Persons* in their rights and relations, to guard them in their *Property*, enforce their *Contracts*, hold them to their liabilities for their *Torts*, punish their *Crimes*, by means of *Remedies* administered by the *Government*."[4] The terms in italics in this definition constitute the subject groups or grand divisions of the law for the American Digest System and for Corpus Juris-Cyc, and thus serves as an introduction to the use of these all-important law finders.

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[2] Thomas Erskine Holland, *The Elements of Jurisprudence* (Oxford University Press, London, 1924), 13th ed., pp. 41-42.

[3] Harlan Fiske Stone, *Law and Its Administration* (Columbia University Press, New York, 1915), p. 3.

Sources of the law

The state, acting through governmental agencies, is the sole creator of law. These governmental agencies are: (1) constitutional conventions, (2) legislatures, (3) courts of justice, (4) administrative agencies, and (5) the electors when legislating directly through the initiative and referendum. The resulting forms or sources of law are: (1) legislative enactments or statute law and (2) judicial decisions, or case law.

Divisions of the law

The whole body of the law is commonly divided into: (1) Public Law, which is divisible into (a) Constitutional Law, (b) Administrative Law, (c) Criminal Law, and (d) International Law; (2) Private Law, divisible into (a) the Law of Persons, for example, Domestic Relations, (b) the Law of Property, for example, Real Property, and (c) the Law of Obligations, for example, Contracts, Torts, and Quasi-Contracts.

Furthermore, the rules that constitute any one of these divisions of the law are of two kinds: (1) Substantive, that is, the rules that create legal rights and duties; and (2) Adjective, or the rules of procedure by which the substantive rules are enforced.

C. WHERE TO FIND THE LAW

Bibliography of the law

The legal investigator works with three general classes of books, namely: (1) *Books of primary authority*. These are the authentic records of past and present law; they are (a) statute law books and (b) law reports. (2) *Books of secondary authority*, divisible into expositions and compilations. Expositions may be divided into (a) treatises, (b) legal periodicals, and (c) parts of some encyclopedias. Compilations are (a) legal encyclopedias, (b) legal dictionaries, and (c) digests. (3) *Search books,* or guides to the use of primary books, expositions, and compilations. There are the following types: (a) abbreviation books, (b) tables of cases and statutes, (c) parallel reference tables, (d) subject indexes, (e) extra-annotations, and (f) citation books.

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[4] Roger W. Cooley (Ed.), *Brief Making and the Use of Law Books* (West Publishing Co., St. Paul, 1926), 5th ed., p. 107.

1. Statutes and Decisions

Statute law and where to find it

Statutes are the positive enactments of law-making or other governmental bodies, to which the state gives the force of law.[5] While the classification given below includes ordinances and administrative and court orders, these are statutes only in the sense that they fill in statutory detail as authorized by some statute. Each is, therefore, a part of the statute it supplements. A statute may consist of the following parts: a title, a preamble (frequently absent), an enacting clause, the body, and a repealing clause.[6] A statute may be affirmative, negative, declaratory, penal, mandatory, permissive, directory, perpetual, temporary, remedial, public, or private.

Statute law is divisible into:

1. Constitutions
2. Statutes
3. Treaties
4. Municipal charters
5. Local legislation
    a. City ordinances
    b. County and town ordinances
    c. Legislation amplifying State statutes
6. Administrative rules and orders
    a. By administrative departments
    b. By administrative commissions and boards
7. Court orders
8. Executive orders and proclamations

There are three well recognized classes of collections of general statute law, namely, Compiled Statutes, Revised Statutes, and

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[5] *Stevens v. Griffith,* 111 U. S. 48, 4 Sup. Ct. 283, 28 L. Ed. 348 (1884).

[6] See Chester Lloyd Jones, *Statute Law Making* (Boston Book Co., Boston, 1912), Chaps. IV to XI inclusive.

Codes. Compiled Statutes are a collection of all the existing statute law. The statutes are arranged systematically, but they are not revised, and the collection is not reenacted by the legislative body. Revised Statutes are all the statute law revised (reexamined and restated in corrected or improved form) and reenacted as a body by the legislature. A Code is a concise but complete and coordinated body of law arranged and approved by legislative authority. A Code is not a mere revision of existing statute law; it embodies (1) amendments for the purpose of harmonizing inconsistencies and (2) all other rules which are recognized as the common law of the state.

United States (Federal) statute law

United States Statutes at Large. (Stat. or Stat. at L.). Little, Brown and Co. Boston. 1845-1873. Government Printing Office. Washington. 1875-1928. Pamphlet Laws are issued subsequently to the last volume of Statutes at Large, and Slip Laws subsequently to the last volume of Pamphlet Laws. There is one volume number for all the acts of one Congress, but one volume may be divided into two or more books, the first book containing the public acts, and the other the private acts, concurrent resolutions, treaties, proclamations, and so on.

Revised Statutes of the United States. (Rev. Stat., Rev. St., or R. S.). Government Printing Office. Washington. 1878. 1 vol. Contains the general and permanent statutes in force on December 1, 1873. Supplements: Vol. I, 1874-1891; Vol. II, 1892-1901.

Federal Statutes Annotated. (Fed. Stat. Anno. 2d. ed.). Edward Thompson Co. Northport, New York. 1916-1919. 2d ed. 12 vols. Contains all the laws of the United States of a general, permanent, and public nature in force January 1, 1916. Annual Supplements to date. Quarterly Pamphlet Supplements. The laws are arranged alphabetically by topics, and they are copiously annotated, with parallel references to all editions of the United States Reports, the Reporter System, and the different series of Annotated Reports.

United States Compiled Statutes Annotated (Comp. Stat., or Comp. St.). West Publishing Co. St. Paul. 1916-1917. 12 vols. Annual Supplements and Quarterly Pamphlet Supplements to date. Contains all the laws of the United States of a general nature, arranged by subject matter, with notes for each section citing all federal and State cases and opinions of the United States Attorney-General which have construed the section. There is a one-volume Compact Edition of the Compiled Statutes which is not annotated, and a one-volume Supplement to 1925.

Barnes Federal Code. Dobbs-Merrill and Co. Indianapolis. 1919. 1 vol. Supplement, 1919-1925. 1 vol. The arrangement is the same as that of the Revised Statutes of 1878, and there are Parallel Reference Tables to the Revised Statutes, the Federal Statutes Annotated, and the United States Compiled Statutes.

Code of the Laws of the United States (U.S.C.) Government Printing Office. Washington. 1926. The Code was passed by Congress in June, 1926, and incorporates all of the laws of a general and permanent nature in force on December 7, 1925. Supplement, 1928. 1 vol.

United States Code Annotated (U.S.C.A.). West Publishing Co. St. Paul. Edward Thompson Co. Northport, New York. 1927. The text for this annotated code has been taken from the Code of the Laws of the United States. To the text of the statutes have been added the judicial construction thereof, historical notes, editorial notes, footnotes, and cross references for the guidance of the legal searcher.

Mason's United States Code Annotated (Mason's Code). Citer-Digest Company. St. Paul. 1926. 3 vols. Supplement, 1925-1929. 1 vol. Quarterly pamphlets.

Treaties[7]

Malloy, William M. *Treaties, Conventions, International Acts, Protocols and Agreements between the United States of America and Other Powers.* 1776-1909. 2 vols. Government Printing Office. Washington. 1910. Supplement, 1913. 1 vol. (Vol. III). Compiled by Garfield Charles.

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[7] For an excellent guide to treaties see Denys Peter Myers, *Manual of Collections of Treaties and of Collections Relating to Treaties* (Harvard University Press, Cambridge, 1922). For a list of the collections of treaties between the United States and other powers, see Myers, pp. 342-355. For a discussion of the treaty-making power, see Charles Henry Butler, *The Treaty-Making Power of the United States* (Banks Publishing Co., New York, 1902), 2 vols.

United States Treaty Series, No. 489. Government Printing Office. Washington. 1908-1928. Numbered series of treaties. Beginning with treaty number 489, proclaimed January 29, 1908, all treaties were given numbers, and all subsequent treaties are numbered consecutively and printed in pamphlet form as Treaty Series. These treaties and conventions are printed in the Session Laws and also in the Statutes at Large, most of them appearing also in the compilations.

Constitutions

The United States Constitution Annotated with References to the Corpus Juris-Cyc System. American Law Book Co. Brooklyn, New York. 1925. Also contains the text of the Declaration of Independence, the Articles of Confederation, and the Ordinance of 1787.

The Constitution of the United States of America as Amended to December 1, 1924. Government Printing Office. Washington. 1924. Revised and annotated. Citations to the cases of the Supreme Court of the United States construing its several provisions are collated under each provision.

Poore, B. P. *Federal and State Constitutions, Colonial Charters, and Other Organic Laws of the United States.* Government Printing Office. Washington. 1878. 2d ed.

MacDonald, William. *Select Documents Illustrative of the History of the United States.* 1776-1861. The Macmillan Company. New York. 1909.

Thorpe, Francis Newton. *The Federal and State Constitutions, Colonial Charters, and Other Organic Laws of the States, Territories, and Colonies.* Government Printing Office. Washington. 1901. 6 vols.

State statute law

Each State has its own body of statute law: constitutions, some have compiled statutes, some revised statutes, some codes, all have session laws and pamphlet laws. As the compilations, revisions, or codes are in most cases out of date, the law searcher should go to the session laws and to the pamphlet laws for the latest law on any subject. These State laws are far too voluminous for individual description here. For a list of a State's published statutes, write the Secretary of State of that particular State, or consult a law-book catalog.

Reports of the Supreme Court of the United States[8]

United States Supreme Court Reports:

Dallas (Dall.)	4 vols.	1790-1800	1 - 4 U.S.	1 L. Ed.
Cranch (Cranch)	9 vols.	1801-1815	5 -13 U.S.	2-3 L. Ed.
Wheaton (Wheat.)	12 vols.	1816-1827	14-25 U.S.	4-6 L. Ed.
Peters (Pet.)	16 vols.	1828-1842	26-41 U.S.	7-10 L. Ed.
Howard (How.)	24 vols.	1843-1860	42-65 U.S.	11-16 L. Ed.
Black (Black)	2 vols.	1861-1862	66-67 U.S.	17 L. Ed.
Wallace (Wall.)	23 vols.	1863-1874	68-90 U.S.	18-23 L. Ed.
United States (U.S.)	91-date	1875-date	————	24 L. Ed.

The first 90 volumes are, therefore, cited either by the name of the reporter or by the title; from volume 91 on they are designated only by number. There has been an official reporter for these reports since 1817, and the government has controlled their publication from time to time through contract with private publishing houses. In 1922, beginning with volume 257, in accordance with the provisions of a statute effective November 1, 1921, the printing, publication, and distribution of these reports were intrusted to the Government Printing Office, Washington. Advanced sheets are issued quarterly. This is the official single volume edition.

United States Supreme Court Reporter (Sup. Ct. or S. Ct.). West Publishing Co. St. Paul. 1882-1928. This is one of the series in the National Reporter System explained below. It begins with the cases reported in 106 U. S. and contains all later cases. One volume of the Supreme Court Reporter contains from three to five single volumes of the United States Reports. Quarterly advance sheets and annual volumes are now issued. The most important feature of this report is the key number annotation to the American Digest System, described below.

United States Supreme Court Reports. Lawyers' Edition (L. Ed.). Lawyers Cooperative Publishing Co. Rochester, New

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[8] For English law reports see: Hicks, *op. cit.*, Pt. I, Chap. IV, Pt. III, Appendix IV; Cooley, *op. cit.*, pp. 519-565; *Sweet & Maxwell's Guide to Law Reports and Statutes* (The Carswell Company, Ltd., Toronto, 1929); J. C. Fox, *A Handbook of English Law Reports*, 1776-1865 (Butterworth & Co., London, 1913), Pt. I.

York. Complete reprint, 1790-1928. From three to five single volumes of the United States Supreme Court Reports are bound in one book. Marginal pagings give the pagination of the single volume United States Supreme Court Reports. The Lawyers' Edition reports every decision of the United States Supreme Court in full, with headnotes and epitomized briefs of counsel. The cases are annotated with editorial notes. The set is completely indexed with a thorough digest, and bound in books one to sixty, following each single volume, are Rose's Notes which give a complete judicial history of each case to 1917. There are quarterly advance sheets.

Reports of the United States Circuit Courts of Appeals, Circuit Courts, District Courts, and Commerce Court

The decisions of the United States Circuit Courts of Appeals from the organization of these courts in 1891 to the present time are reported in the Federal Reporter (Fed.). Up to 1920 they were also reported in the Circuit Court of Appeals Reports (C.C.A.). The decisions of the Circuit Courts, from the organization of these courts in 1789 to their abolition in 1912, and of the District Courts from 1789 to 1879, are reported in Federal Cases (Fed. Cas.), and since 1880 in the Federal Reporter. The decisions of the Commerce Court, from its organization in 1910 to its abolition in 1913, are reported in the Federal Reporter. The Federal Reporter is the only series now published which reports the decisions of these lower federal courts, and the Reporter is, therefore, accepted by all courts without question, even though unofficial. The Federal Reporter is in two series; the first was completed in 1924 in 300 volumes, the second [F. (2d.)] began publication in 1924 with volume I and continues as the current series of the Reporter.

Special reports and collections of cases

Court of Claims Reports. These reports consist of Devereux's Reports (Dev. Ct. Cl.), 1855-1856, 1 vol., and Court of Claims Reports (Ct. Cl. or Court Cl.), 1863-1928.

Court of Customs Appeals Reports (Cust. A.). 1910-1928. Decisions of the Court of Customs Appeals are published in the weekly edition of the *Treasury Decisions* (Treas. Dec.). 1899-

1928. One series of Treasury Decisions reports cases affecting customs and general appraisers; a second series reports internal revenue cases.

Interstate Commerce Commission Reports (I.C.C. or Inters. Com. Rep.). 1887-1928.

Federal Trade Commission Reports. 1920-1928.

Public Land Decisions. 1881-1928.

United States Patent Office Gazette. 1872-1928.

Opinions of Attorneys-General (Op. Atty. Gen.). 1852-1928.

Digest of Opinions of the Judge Advocate General of the United States Army. 1865-1928.

American Bankruptcy Reports (Am. Bankr. Rep.). 1899-1923. 49 vols. Discontinued.

American Bankruptcy Reports, New Series (Am. Bankr. Rep. N. S.). 1923-1928.

American Corporation Cases (Am. Corp. Cas.). 1868-1888. 11 vols. Discontinued.

American and English Corporation Cases (Am. & Eng. Corp. Cas.). 1883-1894. 48 vols. Discontinued.

American and English Corporation Cases, New Series (Am. & Eng. Corp. Cas. N.S.). 1894-1904. 19 vols. Discontinued.

Municipal Corporation Cases (Mun. Corp. Cas.). 1900-1904. 11 vols. Discontinued.

Banking Cases, Annotated (Bank. Cas.). 1900-1905. 5 vols. Discontinued.

American Negligence Cases (Am. Negl. Cas.). 1789-1896. 17 vols. Discontinued.

American Negligence Reports (Am. Negl. Rep.). 1896-1910. 21 vols. Discontinued.

Negligence and Compensation Cases (N.C.C.A.). 1912-1928.

Lobingier, *Extraterritorial Cases* (Lobingier Extra. Cas.). 1920-1928.

Public Utility Reports (P.U.R.). 1915-1928.

United States Aviation Reports. United States Aviation Reports, Inc. Baltimore. 1928. 1 vol.

State and territorial reports

The States and territories publish their own official reports. These are usually for the highest or the higher courts, and they generally cover most of the decided cases. For a list of these reports see *Law Books and Their Use,* pp. 39-51, and Cooley (Ed.), *Brief Making and the Use of Law Books,* 5th ed., pp. 492-511.

National Reporter System

This system reports in full, for the periods indicated below, the decisions of the courts of last resort of all the States, of the lower courts of the State of New York, of the Supreme Court of the United States, and of the lower federal courts. State cases decided before the period covered by the *Reporter* are to be found in the official reports of the States.

Supreme Court Reporter (Sup. Ct. or S. Ct.). 1882-1928.

Federal Reporter (Fed.). 1880-1928.

The Atlantic Reporter (Atl.). 1885-1928. For Connecticut, Delaware, Maine, Maryland, New Hampshire, New Jersey, Pennsylvania, Rhode Island, and Vermont.

The Northeastern Reporter (N.E.). 1885-1928. For Illinois, Indiana, Massachusetts, New York, and Ohio.

The Northwestern Reporter (N.W.). 1879-1928. For Iowa, Michigan, Minnesota, Nebraska, North Dakota, South Dakota, and Wisconsin.

The Pacific Reporter (Pac.). 1883-1928. For Arizona, Colorado, California, Idaho, Kansas, Montana, Nevada, New Mexico, Oklahoma, Oregon, Utah, Washington, and Wyoming.

The Southeastern Reporter (S.E.). 1887-1928. For Georgia, North Carolina, Virginia, and West Virginia.

The Southern Reporter (So.). 1887-1928. For Alabama, Florida, Louisiana, and Mississippi.

The Southwestern Reporter (S.W.). 1886-1928. For Arkansas, Kentucky, Missouri, Tennessee, and Texas.

The New York Supplement (N.Y. Supp.). 1888-1928. Contains every existing series of reports of the intermediate and lower courts of record of New York.

How to use the Reporters. To facilitate the use of the Reporters a "Blue Book" containing parallel citation tables for the State reports and the Reporters is published in connection with each volume. The tables are compiled in two forms: "(1) A skeleton table, which gives merely the volume and page of the official report, without the title of the case, arranged in the numerical order of the pages, together with the volume and page of the Reporter in which the case will be found; and (2) a full table of cases, arranged in alphabetical order by titles, with the citation to the Reporter."[9] Given an official State report citation it may be translated, by means of these tables, into the Reporter citation. The "Blue Books" are supplemented by "Blue Tables," sometimes called "Blue Label Tables," printed on blue-tinted paper and bound in the back of the later volumes of the Reporters. To reverse the process, to translate a Reporter citation into an official State report citation, a "Reverse Front Table," printed on white paper to be pasted on the inside of the front cover of each volume of the Reporters, is provided. This table gives, in numerical order and without the title, the Reporter page for each case reported in that volume, and directly opposite the Reporter page is the official State report citation.

By means of the "Blue Books," therefore, it is possible to find a case in a Reporter from a State report; and the "Reverse Front Table" gives the State report citation for the cases reported in any particular volume of the Reporters.

In addition to the above parallel citation tables, each number of the advance sheets and each bound volume of the Reporters contains a Table of Cases Reported, a Table of Cases on Rehearing, a Table of Statutes Construed, and an Index-Digest.

From 1902 to 1908 the Reporters were annotated to the Century Digest, and in November, 1908, the Key-Number Annotation of the Decennial Editions was adopted;[10] that is, the catchwords or titles used for the syllabi paragraphs in the Reporters correspond to the law titles or topics in the American Digest classification, the numbers which follow these catchwords (immediately following the key symbol) correspond to the Digest topic numbers, and the parenthetic numbers indicate the sections of the topic.

Annotated Reports System

The following reports are commonly known as the Annotated Reports System.

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[9] Cooley, *op. cit.*, p. 198.

[10] See pp. 200-201.

American Decisions (Am. Dec., Am. D., or A. D.). 1760-1869. Bancroft-Whitney Co. San Francisco. 100 vols.

American Reports (Am. Rep., Am. R., or A. R.). 1869-1887. Bancroft-Whitney Co. San Francisco. 60 vols. A three-volume digest, Rapalje's Digest, covers American Decisions and American Reports.

American State Reports (Am. St. Rep., Am. S. R., or A. S. R.). 1888-1912. Bancroft-Whitney Co. San Francisco, 140 vols. This is a continuation of American Reports. Reports leading cases decided in the courts of last resort in the States. The cases are fully reported and the set contains many annotations. Green's Digest, in five volumes, covers the 140 volumes.

American and English Annotated Cases (A. & E. Ann. Cas.). 1906-1912. Edward Thompson Co. Northport, New York. 21 vols. Contains important cases from American, Canadian, and English reports. The set is thoroughly annotated and has a one-volume digest.

American Annotated Cases (Ann. Cas.). 1912-1918. Bancroft-Whitney Co. San Francisco. Edward Thompson Co. Northport, New York. 32 vols. This series is a result of a consolidation, in 1912, of the American State Reports and American and English Annotated Cases. There is a one-volume digest.

Lawyers Reports Annotated (L.R.A.). 1887-1918. Lawyers Cooperative Publishing Co. Rochester, New York. 146 vols. The set is divided into three series or units, and it has a ten-volume digest that covers all three series. Leading cases from State courts of last resort and the federal courts are fully reported and annotated. The three units are covered by a single digest, the *Complete L. R. A. Digest* (1889-1918).

American Law Reports Annotated (A. L. R.). 1919-1928. Lawyers Cooperative Publishing Co. Rochester, New York. Bancroft-Whitney Co. San Francisco. Edward Thompson Co. Northport, New York. A one-volume digest covers volumes 1 to 27 inclusive. This report resulted from a consolidation, in 1919, of the American Annotated Cases with the Lawyers Reports Annotated, two competing series since 1888. The report covers leading cases with dates. Epitomized briefs of counsel accompany the cases. All citations of authorities, both in the court opinions and in the annotations, are verified. They contain parallel references to the State reports, to the Reporter System, and to the different series of Annotated Reports. Annotations are exhaustive, showing the existing state of the law on the point considered. Supplemental cases are cumulated from year to year in a "Blue Book" and contained in the pamphlet indexes. Volumes 1 to 27, inclusive, are brought down to date by a one-volume "Blue Book" of supplemental cases.

English Ruling Cases (E. R. C.). Earliest times—1900. Lawyers Cooperative Publishing Co. Rochester, New York. 26 vols. This is a collection of leading English cases prior to 1900. Each case (or group of cases) is preceded by a statement of the legal principle involved, and is followed by an "English note" by the English editor citing the subordinate English cases, and an "American note" by the American editor comparing American case law with the case cited and reviewing the leading American authorities on the point.

British Ruling Cases (B. R. C.). 1900-1928. Lawyers Cooperative Publishing Co. Rochester, New York. This is the current report since 1900. It comprises important cases from the courts of England, Ireland, Scotland, Canada, Australia, and New Zealand, accompanied by extensive annotations summarizing all the American, English, and Canadian case law on the principal point decided in the case reported.

United States Supreme Court Reports. Lawyers' Edition. This report has been described above in connection with other reports of the Supreme Court of the United States.

How to use annotated reports. If the worker wishes to find a case on his subject in an annotated series, he may begin by using the digest to the series in which he expects to find his case. The digest topic or note covering the point of law in which he is interested will cite a case in point and indicate whether the case is or is not annotated. On turning to the case in the annotated reports the searcher will find an annotation of the digest topic, which corresponds to a paragraph in the syllabus of the case, if the case was marked "Annotated" in the digest. If, on the other hand, the investigator knows the title of a case in point he may obtain its annotated series citation (1) by using the parallel tables compiled by the publishers of the different series, (2) by consulting the tables of cases found in the series' digests, (3) by referring to the tables of cases in the Decennial Digests, or (4) by the use of citation books, the nature and use of which is explained later in this chapter.

Official and nonofficial reports

Some law reports are regarded as "official," such as the United States Supreme Court Reports and the several State reports; others are "nonofficial," that is, no governmental agency authorizes or assumes responsibility for their publication. The distinction has no practical value today, as the copies of the opinions, decisions, and arguments printed in the two types of reports are obtained from the same sources, namely, the printed records. In early days written opinions were not filed, and the report had to be made by the court reporter from the oral arguments of counsel and the oral deliverances of the judges. Much depended upon the reporter then. Now the value of a report is not determined by the fact of its being official or nonofficial—it is determined by its accuracy and completeness, which depend upon the ability, judgment, and industry of the editorial staff of the publishers.

Court records

In the record rooms of courts of record, federal and State, and in many of the more complete law libraries, may be found the printed records of decided cases. These records set out all the evidence taken in the cases together with the briefs of counsel. This is an invaluable source of information that should not be overlooked by the student of the social sciences.

2. Expositions

Treatises

"The distinctive features of genuine representatives of this class are literary form, presentation of ideas in the words of the author, rather than by compilation of quotations, logical classification of materials drawn from authentic sources, and systematic discussion of the state of the law pointing out difficulties, inconsistencies and defects and suggesting possible improvements."[11] Very few meet all of these requirements.

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[11] Hicks, *op. cit.*, p. 145.

Treatises are divisible into: (1) *Monographs,* discussing a single subject or branch of the law. (2) *Commentaries,* or works which deal in a broad and somewhat superficial way with the law as a whole. Commentaries are less exhaustive and more elementary than monographs. (3) *Textbooks,* which are less pretentious than either monographs or commentaries. They deal with one topic. They are in the nature of manuals for practical reference; they are compilations rather than expository works. (4) *Historical works,* or histories of law and of legal institutions. (5) *Treatises on jurisprudence,* works that treat of the nature of law and of the philosophical ideas underlying the law—works on the science of law, on legal theory, and on legal concepts philosophically considered.

Legal periodicals

There are a large number and variety of legal periodicals. Besides the usual professional (*American Bar Association Journal*) and commercial (*American Law Review,* now the *United States Law Review*) types of publication, there are in the United States a large number of law school periodicals. The latter are not mere college journals with a local interest. Most of them are high-grade law journals containing articles contributed by writers of note, analyses of important judicial decisions, notes on current legislation and current court decisions, and book reviews. They are usually edited by students, and this work is regarded as an important part of the educational program of the schools. For a list of these publications, law school libraries should be consulted.

3. Compilations

Legal encyclopedias

Literally the word *encyclopedia* means the whole field of human knowledge but in legal literature it has been applied to at least three different types of works: (1) those whose scope includes all the subjects or titles of the law and all the authorities, such as *Corpus Juris*; (2) those that consider all the subjects of the law but not all the authorities, such as the *Encyclopedia of the United States Supreme Court Reports*; and (3) those that treat only a single subject or title of the law but all the authorities, as the *Encyclopedia of Evidence.*

While legal dictionaries are word-books, legal encyclopedias are subject-books; they are "alphabetically arranged textual treatments of the law." Encyclopedias and digests use the same system of alphabetical headings; they differ in that while a digest is made up of an alphabetical grouping of brief summaries of cases (corresponding with the headnotes to the cases in the law reports), an encyclopedia is composed of articles arranged in alphabetical order and supported by footnotes citing the authorities. A digest is an index of the points of law decided in the cases, without comment; an encyclopedia seeks to determine the rules of law that may be deduced from the cases.

As the law is constantly changing, the texts of encyclopedias must be constantly revised, else they become sources of error. Furthermore, an error in judgment by the writer of an article for the encyclopedia may mislead the reader.

Some of the more important American legal encyclopedias are:

American and English Encyclopedia of Law (Am. & Eng. Enc. Law). Edward Thompson Co. Northport, New York. First Edition, 1887-1895. 29 vols. Second Edition, 1896-1905. 32 vols. Third Edition, 1905-1908. 5 vols. The Third Edition was intended to be completed in about 55 volumes, but publication was suspended after five volumes had been published. The First Edition purports to cover the entire field of modern law; the Second Edition treats the substantive law only; and the Third Edition covers both substantive and procedural law.

Ruling Case Law (R. C. L.). Edward Thompson Co. Northport, New York. Bancroft-Whitney Co. San Francisco. 1914-1921. 28 vols. Supplements, 1921-1925. 5 vols. Ruling Case Law is a simple and logical narrative digest of the decisions contained in American Decisions, American Reports, American State Reports, American and English Annotated Cases, American Annotated Cases, English Ruling Cases, British Ruling Cases, Lawyers' Reports Annotated, the United States Supreme Court Reports, and, since 1919, American Law Reports Annotated. The text, which occupies the greater part of the page, is devoted largely to the statement of principles and rules derived from the cases and from appended editorial annotations. The footnotes are used almost exclusively for the citation of supporting authorities. Each volume is indexed and a general index is incorporated in volume 28. The articles comprising the text are arranged alphabetically under 377 topics. Following the title of each topic is a detailed analysis with section references.

Encyclopedia of United States Supreme Court Reports (Enc. U. S. Sup. Ct. Rep.). 1754-1907. Michie Co. Richmond, Va. 11 vols. Supplements, 1907-1923. 2 vols. An encyclopedia for a single series of reports.

Encyclopedia of Evidence (Enc. Ev.). L. D. Powell Co. Los Angeles. 1902. 14 vols. Supplement. 1 vol. An encyclopedia for a single subject.

Cyclopedia of Law and Procedure (Cyc.). The American Law Book Co. Brooklyn, New York. 1901-1912. 40 vols. Covers the entire field of law, substantive and adjective, under 440 main titles. Annual volumes of "Cyc. Annotations," cumulated from year to year, were published to keep the text up to date. These annotations were combined, in 1914, with the annotations to Corpus Juris.

Corpus Juris-Cyc (C. J.). American Law Book Co. Brooklyn, New York. 1901. The Corpus Juris-Cyc system is composed of the older Cyclopedia of Law and Procedure (Cyc) and Corpus Juris (C. J.) now being published to supersede Cyc. It is made up of Corpus Juris as far as published, Cyclopedia for the rest of the alphabet, and supplementary volumes to keep both systems down to date. The work is to be completed in 70 volumes and will cover the whole field of the law in 449 complete and correlated treatises, citing and considering all of the reported American cases, including those from Hawaii, Porto Rico, the Philippine Islands and Canada, and the leading and important cases of England.

How to use Corpus Juris-Cyc. "Corpus Juris is a systematic statement of the entire body of the law in great detail and supported by references to all of the decisions. It is a discussion and analysis of the principles and rules of the law and of their exceptions, limitations, and qualifications with thoroughness and attention to the application of such rules to the facts of particular cases. This statement of the entire law, requiring some seventy royal octavo volumes, is presented under four hundred and forty-nine titles conforming in the main to the titles of the American Digest Classification Scheme, such changes and additions having been made as seemed to the editors of Corpus Juris necessary to a better encyclopedic treatment. Also arranged alphabetically throughout the volumes are many thousands of additional headings, under which appear judicial definitions of words, phrases and maxims of the law and which also by means of references to other parts of the work afford a very full internal index. A general index will complete the work."[12]

Corpus Juris embodies the following distinctive features:[13] (1) As specific a statement as possible of the legal rule or principle is made in the text, and this statement is supported by footnotes citing as authorities all the United States, State, and English and Canadian cases on the point. (2) The statement of the legal principle is further supported (ordinarily in the footnotes) by illustrations applying the rule to particular facts. (3) The stages of development, if any, of the rule as stated are indicated in the text and supported by footnote citations of the authorities. (4) If the rule has recognized limitations, as is frequently the case, they are stated in the text treatment in Corpus Juris, and in the text or footnotes in Cyc. (5) Exceptions to the general rule as limited are noted in the text. (6) Statutory modifications of the common law rule are indicated, and sufficient statement of the statute law is made to a correct presentation of the case law. (7) All contrary or conflicting rules with their history, limitations, exceptions, and statutory modifications are stated. (8) When authoritatively possible, the reasons for the rule are given. (9) Selected explanatory quotations from the opinions of the court are incorporated in the footnotes. (10) Dicta, when regarded as of value, are given. (11) "Leading" cases, cases judicially recognized as marking the origin of particular rules of law, are pointed out in black-letter notes; so also are "Important" or "Well considered" cases, cases which collect and review the authorities.

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[12] Donald J. Kiser, *Principles and Practice of Legal Research* (American Law Book Co., Brooklyn, New York, 1924), 2d ed., Vol. I, pp. 52-53. See also the Introduction to Corpus Juris for information on its use.

[13] *Ibid.*, pp. 51-69.

(12) English and Canadian cases are cited, primarily because of their importance in the interpretation of the common law.

To keep Corpus Juris up to date, Annual Annotations are published. The material from the new cases is arranged in the Annual Annotations under titles that correspond to the titles in Corpus Juris. The Annual Annotations are combined, from time to time, into permanent volumes.

Corpus Juris-Cyc divides the law into seven grand divisions: I Persons, II Property, III Contracts, IV Torts, V Crimes, VI Remedies, VII Government. These divisions are subdivided into a number of pertinent subheads, under which are grouped 449 standard law titles. These titles of the law are displayed in a Law Chart, which has been designed for the guidance of the searcher. Following each title is a reference to the volume of Corpus Juris or Cyc where the title is treated.

Directly below the name of the title, where it appears in Corpus Juris, is a legend calling attention to cross references to related titles; and following this is a detailed analytical outline of the title, with section and page reference for each part and subdivision thereof.

Legal dictionaries[14]

There are a large number of useful law dictionaries in print. They are of various kinds. Some are in the nature of glossaries; some deal with special subjects; some relate to the law of individual countries; some are encyclopedic in that they not only define legal terms but also discuss principles of the law itself; others are digest dictionaries because they draw largely upon cases for their legal terms and illustrations. Legal dictionaries are mere compilations; they are not source books. They are useful guides, but their definitions cannot be absolute, for the meaning of words and phrases may be modified by the context.

Some of the more important dictionaries are:

Black, Henry Campbell. *Law Dictionary.* West Publishing Co. St. Paul. 1910. 2d ed.

Bouvier, John. *Law Dictionary and Concise Encyclopedia.* West Publishing Co. St. Paul. 1914. 8th ed. 3d rev. 3 vols.

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[14] For a list of these dictionaries see Hicks, *op. cit.*, Chap. X.

Cyclopedic Law Dictionary. Callaghan and Co. Chicago. 1922. 2d ed. 1 vol.

Judicial and Statutory Definitions of Words and Phrases. West Publishing Co. St. Paul. 1904-1905: 1st ser., 8 vols. 1914: 2d ser., 4 vols. This work partakes of the nature of both a dictionary and a digest. It is an alphabetically arranged compilation of judicial definitions and constructions of words and phrases.

Stroud, Frederick. *Judicial Dictionary.* London. 1903-1909. 4 vols.

Digests

A digest is a compilation, under alphabetically arranged topical headings, of paragraphs, similar to the syllabi or headnotes to cases in law reports, dealing with similar points of law. It is an elaborate index of particular questions decided in cases; it summarizes points of law and groups them, without comment, under topics to which they relate.

Digests may be comprehensive both as to jurisdictions and the period covered; or they may include the cases in one jurisdiction only, as of one of the United States; or they may include only the cases reported in one set of reports; or they may cover only cases on one subject of the law. They are of three types: encyclopedic digests, full-paragraph digests, and short-line digests. "In the encyclopedic type, a narrative text at the top of each page serves as a summary of and running index to the digest paragraphs subjoined in the form of footnotes. In the full-paragraph digest, the points in the case are embodied in short paragraphs, each classified under its appropriate topic and subdivision. The short-line digest substitutes for the full paragraph a few words indicating the nature of the point covered." [15]

Digests are not source books, they are mere compilations, and the paragraphs contained therein are merely statements of what the digestor thinks the cases decide. Important digests are the following:

American Digest System. West Publishing Co. St. Paul. This is the most comprehensive American digest. It covers all reported cases from all the courts of last resort in the United States. It comprises the following five editions:

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[15] *Law Books and Their Use,* 3d ed., p. 86.

Century Digest. 1658-1896. 50 vols. 1897-1904.

First Decennial Digest. 1897-1906. 25 vols. 1908-1912.

Second Decennial Digest. 1906-1916. 25 vols. 1917-1923.

Third Decennial Digest. 1916-1926. 28 vols. 1928-1929.

Key-Number Series. 1927-date. This is the current annual publication, one or more volumes a year. A *Monthly Digest* is published which is cumulated annually into the Key-Number Series.

How to use the American Digest System. All law is arranged in the American Digest under seven categories: Persons, Property, Contracts, Torts, Crimes, Remedies, and Government. These categories form the basis for 34 comprehensive divisions of the law, under which are grouped alphabetically 413 law titles or topics. Below each of these titles is given in order a scope-note (excepting the Key-Number Series), an analysis, cross-reference lines, and the digest paragraphs or points of law, of which there are altogether approximately 5,000,000. Each of the 413 law titles is divided, and often redivided, making a detailed analysis. The subdivisions or sections under each title are numbered consecutively, and are commonly known as "black letter lines" because they are set in bold-face type. The system of classification (of topic headings and analyses) is the same for all five editions of the American Digest, and it is permanent, except that it was often necessary (due to the greater period covered) to subdivide a topic one or two degrees further in the Century Edition than in the others. Every point of law has, therefore, a permanent number in the Century Edition and another permanent number in the Decennial and Key-Number Editions. Beginning with the First Decennial Edition, this number is known as a "Key-Number." As the number of sections under many topics in the Century is greater than in the Decennial, it follows that a given section number may not refer to the same subject matter in the two editions. To correlate the two digests, and thus facilitate their use in connection with each other, certain mechanical devices have been provided.

Given a Decennial section number, how may the corresponding section number in the Century be found? Under each section heading in the Decennial is printed a reference to the topic and section in the Century where similar legal propositions are digested. Furthermore, topic lines that appear in the Century but not in the Decennial classification, or Century lines that differ in wording or numbering from the corresponding Decennial lines, are inserted in their proper places in the topics or body (not in the analysis of the topics) of the First Decennial (not in the Second or Third Decennials or Key-Number Series) as unnumbered "dummy lines" with the proper cross references printed underneath.

To reverse the process, to go from the Century to the Decennial, the worker should consult a pink table found at the front of Volume XXI of the First Decennial and in Volume XXIV of the Second Decennial (also published separately in pamphlet form). This table gives all the law titles in the Century, alphabetically arranged, and under each the numbers of all the section lines. Opposite each Century section number is given the corresponding Decennial "Key-Number."

What has been said above about going from the Decennial to the Century and *vice versa* applies to all other Key-Number digests: the various Reporter Digests (since 1896), the Federal Digest, the Supreme Court Reporter Digest, and some State digests.

Beginning in 1902, all important cases reported in the National Reporter System were annotated by references in the headnotes to the topic and section in the Century Digest where could be found other cases involving the same legal points. Since 1908 every point in every case in the Reporters has been given a Key-Number corresponding to the Key-Number used in the Digest.

Each volume of the American Digest, Key-Number Series, has a number of tables. In the front of each volume is a "Table of Reports," showing the volume and page of the reports where may be found the cases digested in that volume. In the back of each volume is a "Table of Cases Digested" giving the topic and section under which each case is digested. Following this table is a "Table of Cases Directly Affirmed, Reversed, or Modified" by decisions digested in that particular volume.

The Digest has complete tables of American cases from 1658 to date. The First Decennial Table of Cases, covering all cases from courts of last resort from 1658 to 1906, commences with volume XXI and comprises the last five volumes of the set. There is a one-volume Key-Number Table of Cases for the Second Decennial, covering the period from 1906 to 1916; volume XXIX of the Third Decennial covers the period from 1916 to 1926; and Key-Number Tables for cases decided since 1926 are found in the back of the volumes of the Key-Number Series and the Monthly Advance Sheets. These tables give the title of the cases, arranged alphabetically according to the name of the plaintiff, and following the title, the volume and page of State Reports, United States Reports, and the National Reporter System (and of American Decisions, American Reports, American State Reports, or the Lawyers Reports Annotated, if reported in any of these) where the cases are found, and also the topic and section (section if digested in Century Digest, Key-Number if digested in First, Second, or Third Decennial) where each point in each case is placed in the Digest.

Thus a case decided prior to 1896, that is, before the First Decennial Digest, will be listed in the First Decennial Table of Cases, and the Digest reference will be to a section in the Century Digest, which section is numbered but not Key-Numbered.

A one-volume Descriptive-Word Index contains thousands of catchword titles, with references to the topic and Key-Number sections in the Decennials where relevant cases are digested. The titles are arranged alphabetically and include every topic title of the American Digest Classification, every cross-reference title in the Decennials, and many new titles of the same nature introduced for the purpose of amplification. This is a valuable aid to the use of the Digest.

So if the title of the case is known, the Key-Number may be obtained either from the Tables of Cases or from the National Reporter System if the case was decided since 1908. Likewise, the Key-Number for any legal proposition can be learned by consulting either the Descriptive-Word Index or the elaborate analysis following each of the 413 law titles in the Digest. Given the Key-Number, the cases can be collected mechanically and expeditiously.

Halsbury. The Earl of. *The Laws of England.* Butterworth &

Company, London. 1907-1917. 31 vols. Annual Supplements to date. A complete statement of the whole law of England.

Mews, John. *The Digest of English Case Law.* Sweet and Maxwell, Ltd. London. 1898. 16 vols. Annual Supplements to date. Also two supplementary volumes for the period 1898-1907. Contains the reported decisions of the Superior Courts and a selection from those of the Irish courts.

The English and Empire Digest. Butterworth & Company. London. 1919-1929. 42 vols. A complete digest of every English case reported from early times to date, with additional cases from the courts of Scotland, Ireland, India, and the Dominions, with complete and exhaustive annotations.

4. *Search Books*[16]

Search books are mere indexes or guides to the use of other books; they vouchsafe no further information. In this respect they differ from treatises, periodicals, dictionaries, encyclopedias, and digests; these other books not only serve as guides but they also give some information about the material referred to. Furthermore, search books are not always books in the usual sense: they may be parts of books, or lists printed separately or bound in books. Some of them are referred to elsewhere in this work in relation to reports, digests, and so on.[17] The following are search books:

Abbreviation books

Abbreviation books contain alphabetically arranged abbreviations, or short forms, by which law books are customarily referred to by lawyers. Some important abbreviation books are:

Abbreviations of Reports. Catalog of the Library of the Department of Justice. Government Printing Office. Washington. 1904. Pp. v-xlvii.

Abbreviations of the Reports, Textbooks, and Common Legal Terms. American and English Encyclopedia of Law. 2d ed. Vol. I, pp. 101-161.

Cooley, Roger W. (Ed.) *Brief Making and the Use of Law Books.* West Publishing Co. St. Paul. 1926. 5th ed. Pp. 619-687.

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[16] For a comprehensive list of search books see Hicks, *op. cit.*, Pt. III, Appendix I (m), pp. 390-423.

[17] See pp. 190-193, 201-202.

Law Abbreviations. Catalog of the Michigan State Library, Law Department. R. Smith & Co. Lansing. 1896. Pp. 465-620.

Law Books and Their Use. Lawyers Cooperative Publishing Co. New York. 1925. 3d ed. Chap. IV.

Rogers, Walter T. *Dictionary of Abbreviations.* George Allen & Co. London. 1913.

Soule, Charles C. *Legal Abbreviations, being Citations of American, English, Colonial and Foreign Law Text-Books and Reports.* George Allen & Co. London. 1911.

Tables of cases

Tables of cases are alphabetically arranged indexes to titles of cases, with references to the books or places where the cases are reported, summarized, or discussed. Such tables may be comprehensive,[a] or they may list only the cases in one jurisdiction,[b] or they may index the cases to one set of reports.[c] A list of American cases having popular titles or "nicknames" is found in volume XXIV, pp. ix-xviii of the Second Decennial Digest. Tables of cases are published in connection with most reports' series, such as the Annotated Reports and the Reporters described above.

[a] *A Complete Table of American Cases from 1658 to 1906. American Digest. First Decennial Edition.* West Publishing Co. St. Paul. 1911-1912. Vols. XXI-XXV.

[a] *A Complete Table of American Cases from 1906-1916. American Digest. Second Decennial Edition.* West Publishing Co. St. Paul. 1923. Vol. XXIV; and *Third Decennial Edition,* Vol. XXIX, for cases from 1916-1926.

[a] Mew, John. *The Digest of English Case Law.* Sweet & Maxwell, Ltd. London. 1898. Vol. XVI. A table of English reports from earliest reports to 1897.

[b] *Table of New York Cases, 1794-1912.* Showing where such cases are found in Abbott's Digest of all New York reports, Vols. I-XXI, and also where they are annotated in the Lawyers Reports Annotated. Baker, Voorhis and Co.; Lawyers Cooperative Publishing Co. New York. 1916.

[c] *Complete L. R. A. Table of Cases.* Complete Digest of all Lawyers Reports Annotated. Lawyers Cooperative Publishing Co. Rochester, New York. 1923. Vol. IX.

Tables of statutes

Tables of statutes correspond to tables of cases. They list alphabetically the titles by which statutes are known, with specific references to the places where they may be found. Some important tables of statutes are listed below.

Acts Cited by Popular Name. United States Compiled Statutes Annotated. 1916. West Publishing Co. St. Paul. 1917. Vol. XIII, pp. 15185-15194.

Scott, G. W. and M. G. Beaman. *Index Analysis of the Federal Statutes.* Government Printing Office. Washington. 1908-1911. Vol. I, pp. 1367-1373; Vol. II, pp. 1135-1146.

Federal Acts Designated by Popular Names, to March 4th, 1927. The Frank Shepard Company. New York. 1927.

Table of Laws Designated by Popular Name. Federal Statutes Annotated. 1919. 2d ed. Vol. XII, pp. 37-46.

Parallel citation tables

These tables point out the various books or reports where the same cases, statutes, or sections of statutes are printed. Some useful parallel citation tables are:

L. R. A. Table of Cases with Parallel References to Official Reports. Lawyers Cooperative Publishing Co. Rochester, New York. 1913.

Martin, George J. *Numerical Tables of Cases Reported in the American Decisions, American Reports, American State Reports and American Annotated Cases, with References to Monographic Notes.* Bancroft-Whitney Co. San Francisco. 1912. 5th ed.

National Reporter Blue Books. West Publishing Co. St. Paul.

Subject indexes

Subject indexes are alphabetically arranged lists of legal topics, with references under each topic to the places where may be found material relating to such topic. They may be indexes to case law,[a] statute law,[b] or legal periodicals.[c]

[a] *Descriptive-Word Index to Decennial and all Key-Number Digests.* West Publishing Co. St. Paul. 1912.

[b] *Index Analysis of the Federal Statutes,* 1789-1907. Govern-

ment Printing Office. Washington. 1908. 1911. 2 vols. Compiled by G. W. Scott and M. G. Beaman.

[c] *Index to Legal Periodical Literature.* 1888-1923. Boston Book Co. Boston.

Extra-annotations

"The design of extra-annotations is to assist the investigator in judging of the value of a case, and to furnish him with the means of obtaining additional cases in point, by briefly stating the holding in each of the cases which have cited it, and telling whether it was approved, distinguished, limited, or disapproved. . . .

"The matter relating to each case is arranged under the title of such case, and the titles appear in the same order as in the reports for which the extra-annotations are made. Catch lines show the point for which the case is cited. . . . By thus editorially working out an analysis and statement of all the points to which any case in these reports [the sets of reports for which extra-annotations have been made] has been cited in later opinions, the whole history of that case and its value as a precedent in the light of later decisions that have cited or reviewed it are placed directly before the reader in clear and concise form, without making it necessary for him to have access to the reports of the cited cases." [18] Some important extra-annotations are the following:

Rose's Notes on the United States Supreme Court Reports. Lawyers Cooperative Publishing Co. Rochester, New York. 20 vols. Rose's Notes cover cases in volumes 1-241 of the United States Supreme Court Reports, and review cases in the lower federal courts and in State courts of last resort which have cited decisions of the United States Supreme Court. A five-volume supplement is being published. Rose's Notes are also incorporated in the United States Supreme Court Reports, Lawyers' Edition.

L. R. A. Extra-Annotations. Lawyers Cooperative Publishing Co. Rochester, New York. 1913-1914. 6 vols. L. R. A. Extra-Annotations review all cases and annotations in which the cases reported in books 1-70 L. R. A. have been cited. They are also bound in the extra-annotated edition of Lawyers Reports Annotated.

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[18] *Law Books and Their Use*, 3d ed., p. 108.

Notes on the American Decisions and American Reports. Lawyers Cooperative Publishing Co. Rochester, New York. 20 vols. Also incorporated in the extra-annotated editions of these reports.

Extra-Annotations to English Ruling Cases. Lawyers Cooperative Publishing Co. Rochester, New York. 1916. 2 vols. Also found in the extra-annotated edition of English Ruling Cases.

Extra-Annotations for State Reports. These have been published for only some of the States.

Citation books

The primary use of citation books is to supply the lawyer with ". . . references to judicial opinions in which other cases have been cited, reviewed, affirmed, reversed, criticised or commented upon; but some of them give also references to cases in which statutes have been construed, and references to acts in which prior acts have been amended, renewed, or repealed. Most stress is laid on the judicial history as shown in cases, and some books relate only the case law. The legislative history of statutes is sometimes given in separate books. The present tendency, however, is to serve all three of the above purposes in one volume." [19]

Shepard's Citations.[20] The Frank Shepard Co. New York. Shepard's Citations are the most generally used of all citation books. There are separate books for the United States Supreme Court Reports, the Federal Cases and Federal Reports combined, for each of nearly all the State reports, and for each of the Reporters of the National Reporter System, with quarterly cumulative supplements for each book. In these books there are given ". . . the citations of every reported case in the reports, which any particular citation book covers in other cases in the same and some other jurisdictions. The paragraph of the syllabi cited is shown, and whether the case was criticized, distinguished, explained, followed, limited, overruled, questioned, etc.; in fact, the judicial history of the case in citation form. In addition, case citations of the Codes or statutes are given, and also statutory citations, amendments, and repeals for the jurisdiction covered by each particular book, also classified topical indexes and tables of cases for some of the jurisdictions."[21] Cumulative supplements are issued every three, four, or six months, and in some cases every six weeks, depending on the citation requirements of each unit of this citation series.

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[19] Hicks, *op. cit.*, p. 278.

[20] See *Legal Bibliography. Shepard's Citations* (Frank Shepard Co., New York). Other citation books are: *Taylor's Citations* (New York); *Rogers' Citations* (Illinois); *L. R. A. Red Book*, the greater part of which is duplicated in *L. R. A. Extra-Annotations*; the *Citator*, with separate editions for various States; and *Federal Citations*.

How to use Shepard's Case Citations. If the cited case is found, as an example, in volume 38 of the Supreme Court Reporter on page 166 (38 Sup. Ct. 166), turn to the volume of the Supreme Court Reporter Edition of Shepard's United States Citations where "Vol. 38" appears at the top of the page. The page number "—166—" will be found twice in the center of column three, indicating that two different cases commence on page 166 of the Reporter. The citations of Case 2 are as follows:

—166—

Case 2

s245US	474
s 62LE	410
p 38SC	168
s 38SC	222
39SC	^{1}191
f 39SC	^{2}249
251F	^{2}880
251F	954
255F	33
258F	^{2}396
258F	^{2}871

It will be observed that a number of abbreviations and symbols are employed. A complete list of these abbreviations and symbols is found in the Shepard Citation Books. The small superior figures to the left of the page numbers of the citing cases indicate the exact paragraphs of the headnotes of the cited case to which the citations refer. That is, the citation "39SC ^{1}191" indicates that the same point of law dealt with in the first paragraph of the headnotes of 38 Sup. Ct. 166 is also treated in volume 39 of the Supreme Court Reporter, page 191. The small letter "s" (abbreviation for *same case*) to the left of the volume number indicates that the citing case is the same as the case cited; the "p" (abbreviation for *parallel*) indicates that the citing case is substantially like the cited case, either in law or facts; the "f" (abbreviation for *followed*) indicates that the cited case is followed or cited as controlling. The letters "US" following the volume number is the abbreviation for *United States Supreme Court Reports*; the letters "LE," for *United States Supreme Court Reports, Lawyers' Edition*; the letters "SC," for *Supreme Court Reporter*; and the letter "F," for *Federal Reporter*. Thus the citation "s245US 474" means that the cited case (38 Sup. Ct. 166) is also found in volume 245, page 474, of the United States Supreme Court Reports.

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[21] *Law Books and Their Use*, 3d ed., p. 110.

How to use Shepard's Statutory Citations. To illustrate the use of Shepard's Statutory Citations, part of the citations of Chapter 285 of the United States statutes, bound in volume 41 of the *United States Statutes at Large*, are given below. These citations are found in *Shepard's United States Citations, Cumulative* (current unbound supplements), January, 1926. There are three bound volumes of the United States Citations, published in 1915, 1920, and 1925 respectively, and, since 1925, current unbound Cumulative Supplements. Each volume is cumulative.

1920

. . .

June 10
Ch. 285
41 Stat. 1063

E44Stat	397
L44Stat	636
L44Stat	669
L44Stat	714
L44Stat	1240
L45Stat	466
269US	328
70LE	289
46SC	122
275US	415

72LE	171
48SC	198
23F2d	508
26F2d	1002
44Stat	1456

§ 4

269US	328
70LE	289
46SC	122

(Incomplete)

From the above citations it appears that the statute cited was passed by an Act of Congress dated June 10, 1920. It is found in Chapter 285 (Ch. 285) in volume 41 of the United States Statutes at Large, page 1063 (41 Stat. 1063). It was extended (E) by 44 Stat. 397, and limited (L) by 44 Stat. 636, 44 Stat. 669, 44 Stat. 714, 44 Stat. 1240, and 45 Stat. 466. Reference to it is also found in 44 Stat. 1456. It is cited in 269 U.S. 328. 70 L. Ed. 289, 46 Sup. Ct. 122, and so on. Section 4 (§ 4) of the Act is cited in 269 U. S. 328, 70 L. Ed. 289, and 46 Sup. Ct. 122.

Several other sections of the Act are cited in a similar way.

In the manner indicated in the illustration above is given the complete legislative and judicial history of the Act up to January, 1926, the publication date of the Cumulative Supplement cited. "The method of treatment in all sections is essentially the same. Wherever any clause, article, paragraph, section, or division of a chapter has been amended, revised, renumbered, repealed, re-enacted, superseded, or modified in any way, this information is immediately available through this service. In grouping the citations, those indicating legislative action are given first, followed by citations in the state and federal courts. The page numbers refer to the initial page of the case or statute." [22]

D. HOW TO FIND THE LAW

How to search for law on a given question

There are two very different ways of searching for the law on a given question. One is to examine digests, indexes, treatises, and so on, for the subject matter under its topical classification.

[22] W. A. Packard, of the Frank Shepard Company, in Cooley, *op. cit.*, p. 328.

Under the second method the searcher begins with some particular case or decision which bears upon the question he wishes to investigate. Then by use of citation books he can find the volume and page reference to all the reports where that case has been cited, and so find everything that has ever been said about it by the courts. It is not always possible to use this second method.

Ordinarily the better plan is to work from the general to the more specific, investigating the secondary sources first and the primary sources last, since the former are based upon and are, therefore, guides to the use of the latter. Whichever method is pursued, the object of the search is twofold: to determine legal principles, and to discover the authorities that declare and apply those principles.

The use of treatises requires no special explanation. The searcher is advised to use the table of contents, the index, and the table of cases in order to discover with a minimum of effort the places where a given legal proposition is discussed. Likewise, legal dictionaries and most legal encyclopedias are used in the manner of such books. The most comprehensive, and therefore the most important, guides to the use of statute books and law reports are Corpus Juris-Cyc, the American Digest System, and Shepard's Citations, described and explained above.[23] The law searcher should be thoroughly familiar with the use of these books.

Statutory construction[24]

Some general rules of statutory construction are offered as aids to the interpretation of statutes.

(1) A statute should be read in relation to any existing judicial opinions construing it. A law means precisely what a court of last resort says it means. The construction placed upon a federal statute by the federal courts is binding upon State courts, and the construction placed upon a State statute by the court of last resort of that State is followed in the federal courts.

(2) If the language of a statute is clear, not ambiguous, the

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[23] See pp. 197-202, 208-210.

[24] See Eugene Wambaugh, "The Use of Decisions and Statutes," in Cooley, *op. cit.*, pp. 398-413, and Jones, *op. cit.*, Chaps. VIII-XV.

courts will give the words employed their ordinary meaning; the intent of the framers of the act does not concern the court. If, however, the language is ambiguous and capable of more than one construction, then the court will try to discover the intent of the law-makers and the legislative history of the act is admissible evidence.

(3) Unless the contrary intent is evident, technical words are to be given their technical meaning and ordinary words the ordinary or grammatical meaning.

(4) Words should be construed in connection with the context, that is, the entire statute should be read as one complete instrument.

(5) If a statute or a part thereof is capable of more than one construction, one of which would make it unconstitutional, contradictory, manifestly unjust, or retroactive, the court will assume that the legislature intended it to be given the constitutional, rational, just, or prospective construction.

(6) Typographical, clerical, grammatical, or rhetorical errors or inaccuracies should be ignored if the sense is clear notwithstanding them.

(7) Punctuation is not a part of the statute. The courts, with some exceptions, ". . . continue to exercise complete control over punctuation whenever it is necessary to give effect to legislative intent. Marks will be transposed, substituted or disregarded, or inserted where necessary. The courts hold that where the meaning is uncertain the punctuation, like the preamble, may be consulted and may determine the interpretation to be given, but that punctuation alone must not be given a controlling force. If a statute is clear it should be interpreted as punctuated, especially if it has been repeatedly re-enacted with the same punctuation. But punctuation has usually little force."[25]

(8) Specific or particular terms which precede or follow general terms limit the general terms to things "of the same kind," according to the rule of *ejusdem generis,* except where the result would be clearly to overthrow the purpose of the law as expressed elsewhere.

(9) Unless the character of the law calls for an exception,

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[25] Jones, *op. cit.*, pp. 139-140, citing cases.

the singular form includes the plural and the masculine includes the feminine.

(10) Where a contrary intent is not indicated, the common law meaning is given to common law terms.

(11) Penal statutes are construed strictly; remedial statutes liberally.

(12) One of a series of statutes is construed as if that statute and all its predecessors in the series constituted a single statute. All amendatory or repealing acts must be considered in order to determine the existing law on any point.

(13) A judicial construction of a statute is retrospective as well as prospective. A decision by a court of last resort is an authoritative declaration of what the law has always been.

(14) If a statute is copied by another jurisdiction it is presumed to carry with it the construction already placed upon it by the courts of the jurisdiction of origin.

(15) If a statute is adopted by a number of States, with a view to the establishment of a uniform rule of law, the judicial construction placed upon it in any State must have strong persuasive force in all the other States; otherwise the legislative attempt to establish uniformity will be defeated.

(16) Generally speaking, an affirmative constitutional provision or statute which prescribes a method of procedure, such as an amending process, is imperative, that is, no other procedure may be adopted.

(17) In the matter of repeals, "The standard usually followed is that a later general statute which in its most comprehensive sense would include that which is embraced in an earlier particular enactment does not repeal the special act unless it appear from the wording of the act that the legislature intended it to do so. . . . The converse case, where a former general statute clashes with a later special one, is not so difficult. The uniform holding in such cases is that the latter repeals the former only as to the cases to which it applies."[26] A later law does not repeal an older law by implication except (a) to the extent that there is actual repugnancy between them, and (b) where the later statute clearly covers the whole subject matter of the antecedent

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[26] Jones, *op. cit.*, pp. 147, 148-149, citing cases.

one and it is the plain intent of the legislature that the later act shall express the whole law on the subject, and (c) a revision repeals all former statutes on the subject even if there is no direct repugnancy. In Anglo-Saxon states a law does not become obsolete by disuse or contrary custom.

The effect of decided cases: *res judicata, the law of the case, and stare decisis*

The judgment of a court may have two possible results: "It may irrevocably and for all time determine the rights and duties of the parties to the case, according to the doctrine of Res Judicata; and it may, under certain conditions, according to the rule of Stare Decisis, set up a standard according to which similar litigation, involving other parties, must be decided."[27] The two principles should be clearly distinguished when searching for the law of a case.

Res judicata. The doctrine of *res judicata* means that ". . . an existing final judgment or decree rendered upon the merits, and without fraud or collusion, by a court of competent jurisdiction, upon a matter within its jurisdiction, is conclusive of the rights of the parties or their privies, in all other actions or suits in the same or any other judicial tribunal of concurrent jurisdiction, on the points and matters in issue in the first suit."[28] That is, in any litigation there comes a time when "things are decided," as between the parties, finally and without recourse. "To constitute a matter *res judicata,* so that, in a subsequent action, it cannot be drawn in question, (1) the court deciding the issue must have had jurisdiction . . . (2) there must be identity of the subject matter of the action . . . (3) identity of the cause of action . . . though the form of action may be different if it be of the same general class, or if the remedies be concurrent . . . (4) identity of parties . . . but privies of the parties are bound . . . (5) identity of capacity in which they sue or are sued . . . (6) and there must have been a final determination of the issues . . . (7) on the merits . . . (8) upon the particular issue . . . but the adjudication is final upon every matter which might have been litigated under the issues made . . ."[29] In proceedings in *rem* identity of parties is not essential, the adjudication attaching to the *res.*

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[27] *Ruling Case Law,* Vol. XV, pp. 950-951.

[28] Hicks, *op. cit.,* p. 83.

Res judicata applies only to final judgments, that is, to judgments by courts of last resort, or to courts not of last resort when the parties in the case neglected to appeal within the time prescribed by law.

Law of the case. The "law of the case" is the doctrine applied to cases in their progress toward final solution. "When a point of law has been decided by an intermediate appellate court, that decision is binding on the trial court and on the intermediate appellate court itself in all subsequent stages of the case, until it is carried up to a higher court of appeal. If the decision is by a court of last resort, it is binding on the lower courts on retrial or rehearing. Their duty is to apply that decision to the facts. If the case comes before a court of last resort on second appeal, it is held in some jurisdictions that the court is bound by its own former ruling, even though it be now recognized as erroneous. In other jurisdictions this rule is relaxed for the purpose of correcting palpable error."[30]

The doctrines of *res judicata* and the *law of the case* "apply only to the particular case, and the particular facts in evidence, and they affect only the parties to that case and their privies;"[31] they do not establish precedents for subsequent similar cases.

Stare decisis. In common law countries, according to the doctrine of *stare decisis*, "A solemn decision upon a point of law, arising in any given case, becomes an authority in a like case, because it is the highest evidence which we can have of the law applicable to the subject, and the judges [in the same court or in lower courts within the same jurisdiction] are bound to follow that decision so long as it stands unreversed, unless it can be shown that the law was misunderstood or misapplied in that particular case."[32] In civil law countries, on the contrary, past

[29] *Cyclopedic Law Dictionary* (Callaghan and Company, Chicago, 1922), 2d ed.

[30] Hicks, *op. cit.*, p. 83.

[31] *Ibid.*, p. 84.

[32] James Kent, *Commentaries on American Law* (Little, Brown and Co., Boston, 1884), 13th ed. Vol. I, p. 476.

decisions have persuasive authority only, each new litigation must be considered *de novo*. It should be noted that as a decision may be overruled by the court that made it (but this is the exception in practice), it has persuasive rather than imperative authority in this court; but its authority is imperative in all inferior courts within the same jurisdiction.

However, a decision is imperative authority only as to its *ratio decidendi*, the doctrine of the case, and this principle must be discovered before the case can be relied upon as a precedent.

The doctrine of the case

The doctrine of the case, the *ratio decidendi*, is ". . . the underlying principle, the legal reason, which caused the case to be decided as it was decided . . . in every decision there is necessarily involved some proposition of law, without which the judgment in the case could not have been given. It is this principle or proposition that is the ratio decidendi," [33] the authoritative element of the case. The doctrine of the case is not necessarily the concrete point decided in the case; the latter is "limited strictly to the facts of the case, and is binding only on the parties to it or their privies," [34] while the former is a rule of general application that may not be expressed definitely in the opinion but may be assumed. It is the principle of law which is held to govern the rights of the parties in the case that gives the decision the force of a *precedent*, that is, the decision is regarded as evidence of the existence of such a rule of law. A decision is authoritative precedent for that rule, and for only that rule, which the court *had* to recognize and apply, expressly or tacitly, in order to reach that particular conclusion; every other statement of law in the opinion is merely persuasive authority, dicta, as they were not necessary to the determination of the issue.[35]

A court may assign two or more grounds for its decision and the decision becomes authoritative as to each of these grounds.[36]

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[33] Wambaugh, *op. cit.*, p. 354.

[34] *Ibid.*

[35] *Louisville & N. R. Co. v. The County Court of Davidson*, 1 Sneed (Tenn.) 637, 639, 62 Am. Dec. 424 (1854); *Carroll v. Carroll's Lessee*, 16 How. 275, 14 L. Ed. 936 (1853). Also Wambaugh, *op. cit.*, pp. 351-364.

[36] Wambaugh, *op. cit.*, pp. 368-370.

However, if the court can render judgment on any one of several grounds directly raised by the record, the court may ignore all but one, or it may choose to pass upon all of them. If the decision rests upon one ground only it is not authority as to any of the others.

Dicta

All unnecessary statements of law in a judicial opinion are called "dicta." As dicta are merely persuasive authority, it is very important that they be distinguished from the doctrine of the case which is imperative authority. Eugene Wambaugh distinguishes three kinds of dicta. (1) *Obiter dicta,* or any statement of law made by a judge or court "by the way," that is, incidentally or collaterally, or merely by way of illustration or analogy. (2) *Dicta propria,* "that is, personal or individual dicta, the private opinions of the judge who delivers the opinion, not necessarily concurred in by the whole court, and not essential to the disposition of the case at bar."[37] (3) *Gratis dicta,* or gratuitous expressions of opinion on matters not in the record, as when a judge lays down rules for analogous cases after having disposed of the specific points before the court. These statements are in the nature of judicial "asides," to borrow a theatrical term.

The test, therefore, of what are dicta, and hence not authoritative in an opinion, is whether the statements are or are not *necessary* to the decision rendered in the case. A dictum is an unofficial expression of opinion (which may or may not be a correct statement of a point of law); the doctrine of the case is the law officially applied to a controverted question. Dicta are statements of secondary authority, but as they are pronouncements by persons skilled in the law they usually are correct and are entitled to careful consideration.

The doctrine of the case may be ascertained by determining what question was brought before the court for adjudication, what disposition was made of this question, and what reasons were given by the court for its decision. This involves an analysis of the parts or elements of a case.

[37] *Ibid.,* p. 368.

The parts of a case

The report of a case is usually divided into seven parts, as follows:

1. *The title.* The usual form of the title is *Smith v. Brown,* that is, Smith, plaintiff, versus or against Brown, defendant. If the case is appealed, this order of names may be retained throughout its whole history, or the names may be reversed, as, *Brown* (plaintiff in error or appellant) *v. Smith* (defendant in error or appellee).[38] Criminal cases are entitled *People* (or *State* or *Commonwealth*) *v. Smith.* But in special proceedings the title of a case may be in any of the following forms: *In re Waite,* that is, in the matter of Waite. "Properly used, this indicates a judicial proceeding in which there are no adversary parties, but simply some *res* concerning which judicial action is to be taken, such as the probate of a will, the administration of a bankrupt's estate, etc. But sometimes improperly it is used to designate a proceeding where one party makes an application on his own behalf, but such proceedings are more usually entitled 'ex parte.'"[39] *Ex parte Young,* relates only to the side of Young, a one-sided proceeding. *People ex rel. Jones v. Doe,* indicates a proceeding by a public official on the relation of (*ex relatione,* at the information of, or by the relation) the person named, such as a bill in equity for an injunction to abate a public nuisance maintained by Doe to the detriment of Jones and others. *Doe ex dem* (*ex demissione*: from, or on the demise) *Smith,* or *Doe d. Smith,* "indicates an ejectment suit, in which, according to ancient practice, the nominal plaintiff was a man of straw, to whom the real plaintiff was, by a fiction of law, deemed to have demised the property in question."[40]

2. *The syllabus or headnote.* The syllabus or headnote, which follows the title, consists of summary statements of the points of law decided in the case. Headnotes are commonly written by the law reporter, but sometimes judges prefer (in some States they are required) to write their own headnotes. Syllabi are not authoritative; they are mere *prima facie* guides to the doctrine of

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[38] Less than half of the States reverse the order on appeal.

[39] Henry Campbell Black, *Law Dictionary* (Callaghan and Co., Chicago, 1922).

[40] *Law Books and Their Use,* 3d ed., p. 27.

the case. They are not part of the decision, and do not control, even in the States where they are written by the judges,[41] except in Ohio where a statute provides that in case of discrepancy between the headnote and the opinion the headnote shall control.

3. *The facts or statement.* The facts of the case are usually summarized in the opinion of the judge or in a statement of counsel, though they may be put in separate paragraphs following the syllabus. This is an account "of the nature of the litigation and the manner in which the case reached the court whose action is reported, including as elaborate an account of the pleadings and of the evidence as may be necessary in order to show what question was presented to that court." [42]

4. *The abstract of the briefs and arguments.* Formerly abstracts of the briefs and arguments of opposing counsel were embodied in the report of a case. This practice is still followed in some law reports, but more commonly only the names of the counsel appearing in the case are given.

5. *The opinions of the judges.* A case may contain three kinds of opinions: (1) A *majority* opinion, written by a member of the court at the request of the Chief Justice. In the absence of concurring or dissenting opinions, this is regarded as the opinion of the entire court. The opinion is properly the reasoned argument of the court, but sometimes the word "opinion" is used to mean both the reasons and the conclusions reached. (2) A *concurring* opinion, in which one or more of the judges concur in the decision of the majority but choose to assign different or additional reasons for the conclusions reached. (3) A *dissenting* opinion by one or more of the judges taking issue with the majority judges. This opinion may become the majority opinion in a subsequent case. Thus the dissenting opinion in the *Freight Association*

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[41] Judges are required by law to write the syllabi in Florida, Georgia, Idaho, Kansas, Louisiana, Minnesota, Mississippi, Nebraska, New Jersey, New Mexico, North Dakota, Ohio, Oklahoma, West Virginia. Judges may not be required to write syllabi unless there is a constitutional provision to that effect. *In re Griffiths*, 118 Ind. 83, 20 N. E. 513 (1889); *In re Headnotes to Opinions*, 43 Mich. 641, 8 N. W. 552 (1881).

[42] Eugene Wambaugh, *The Study of Cases* (Little, Brown and Co., Boston, 1894), 2d ed., p. 4.

Cases[43] became the majority opinion in the *Standard Oil Case*[44] when the court applied the "rule of reason" to the construction of the Sherman Anti-Trust Law. As it is possible to render a decision without an opinion, the delivery of an opinion is not a necessary part of the duty of a judge. However, it is highly desirable that the court should announce the reasons for its decision. The Supreme Court did not give an opinion, or reasons for its conclusions, in the *National Prohibition Cases,*[45] an omission that has been generally deplored.

In some cases there are *per curiam* opinions, that is, opinions rendered anonymously by the court. A *per curiam* opinion is not as highly regarded as one written by some one judge under his name. This form of opinion is used when the court regards a long discussion unnecessary because the court is all of one mind.

6. *The decision of the court.* The decision of the court is the final conclusion reached as a result of the reasoned argument of the opinion, that is, the court finds for or against the plaintiff, or it affirms or reverses the decision of the lower court. Sometimes, however, the term "decision" is used to denote the entire case, and sometimes to include both the reasons and conclusions of the court. A distinction should be made between the *decision* of the court, which is the law, and *dicta,* or matters in the opinion that are not relevant to the issues, which is not the law of the case. It is the decision, not the opinion, that makes the precedent.

7. *The judgment or decree.* The formal entry of the court's order is called a "judgment" in common law cases, and a "decree" in chancery or equity cases.

Circumstances affecting the authority of a decision[46]

The authority of a case as precedent may be weakened in a number of ways: (1) When the opinion is written by a judge who does not concur in it. (2) If the court is equally divided the case has no authority as precedent. (3) When there are concurring opinions by members of the court, where some of the judges concur in the result but not in the reasoning, it is difficult to discover the legal proposition which controlled the results reached. (4) If the case overlooks and overrules earlier decisions in the same jurisdiction, it is evident that it was not given due consideration. (5) When the decision is contrary to the weight of authority in other jurisdictions. (6) If the decision is based upon cases that were misinterpreted or overruled, or have since been overruled. (7) If the decision is based merely upon so-called professional authority, as text-books and opinions of administrative officers. (8) If the decision is based upon erroneous reasoning, reasoning that is contrary to the spirit of the law. (9) If it is the first case of its kind, a case of first impression, presenting a novel question of law. (10) If the decision reflects the political, economic, or social views of the judges. (11) An amicable or *ex parte* suit is not of the highest authority, as the absence of dispute has not made the case a thoroughly considered one. (12) If the case is overruled it is no longer authority, but if it has been doubted, distinguished, limited, or criticized, its authority has been weakened. (13) A decision may be weakened through the lapse of time. The original grounds for the decision may disappear through a change in circumstances; that is, the original decision may in course of time become obsolete. *Cessante ratione legis cessat ipsa lex:* when the reason for the law fails the law also fails. (14) If a decision is not subsequently cited and followed it becomes weakened through non-use. (15) The case may not have been given thorough consideration. It may have been inadequately argued, or the court may have dealt slightingly with some point or points, weakening the case as to such point or points. (16) If the case fails to cite well-considered and applicable authorities it loses much of its force. (17) Dissenting opinions weaken the decision, especially if the dissenting judges are men of recognized ability and if the dissenting opinions are convincingly and forcefully written. (18) The report of the case may be incomplete or inaccurate. (19) A decision may be overruled by the court that made it, that is, the decision is persuasive rather than imperative in such a case.

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[43] *United States v. Trans-Missouri Freight Association,* 166 U. S. 290, 17 Sup. Ct. 540, 41 L. Ed. 1007 (1897); *United States v. Joint Traffic Association,* 171 U. S. 505, 19 Sup. Ct. 25, 43 L. Ed. 259 (1898).

[44] 221 U. S. 1, 31 Sup. Ct. 502, 55 L. Ed. 619 (1911).

[45] 253 U. S. 350, 40 Sup. Ct. 486, 64 L. Ed. 946 (1920).

[46] Wambaugh, "The Use of Decisions and Statutes," Cooley, *op. cit.*, pp. 387-398.

CHAPTER X

GATHERING DATA OUTSIDE OF LIBRARIES

Advisability of gathering data outside of libraries

While it is a fundamental principle in good methodology that all original sources of information should be canvassed if reasonably possible, there are times when it is not reasonably possible or advisable to undertake such tasks. If a research worker has exhausted all available documents in general and special libraries and finds that he has gaps to fill in his data, he is confronted at once with the question of the feasibility of attempting to gather additional material through personal contacts. An analysis of what this will involve may convince him of the wisdom or lack of wisdom in undertaking such a task. If he finds it is beyond his power he must either discard his problem or find some way to rescue the incomplete results of his preceding labors. The incomplete materials may or may not have value. A research worker who is not an expert in his field often cannot know until he reaches this stage of his investigation just what gaps may require filling in this manner. It is a chance that a research worker is compelled to take occasionally. When a scholar reaches this impasse and finds his incomplete work valueless, he discards it and turns his attention to other problems. The less scholarly person is prone to attempt to develop something out of his incomplete preliminary labors and, as a result, foists on to the public a product of little value.

Whether it is advisable to proceed into the open field for the requisite additional information involves several considerations: (1) The facts to be investigated may be so extensive in nature and extend over such a broad field that the task could not be accomplished without large staffs, an expenditure of much time, energy, and money, all of which are beyond the capacity of the investigator. (2) The status of the research worker, either because of his inconsequence or class interests, may be such as to make it practically impossible for him to secure the desired information. (3) The information may be of such a nature that only persons invested with legal authority could expect to secure the facts. (4) The nature of the desired data may be such that the investigator would not consider it wise to trust a staff to secure them for him since perhaps he alone is competent to judge in the individual cases, and yet the task may be beyond his individual powers. (5) The investigator may realize that since he must depend upon the uncertain results which come from staffs his information will not be sufficiently improved over that which he has in his possession to justify the attempt to fill the gaps. Consequently he must discard his problem or attempt to treat it with inadequate data.[1]

If, however, it appears advisable to proceed with the research problem, the data may be secured in any one or all of the following ways: He may gather the data directly himself or indirectly through a staff (1) by observation not involving experiment; (2) by experimentation; (3) by questions through (a) interviews, (b) letters, or (c) questionnaires; (4) by so-called field work in which he uses (a) the case study, (b) the sampling method, or (c) the census system or complete enumeration. Each of these methods will be examined in the order mentioned.

Gathering data by observation not involving experiment

Observation of this nature involves conditions in which there is no attempt to control artificially the factors observed. The scientist may wish to observe animals in their native habitats or human beings in their various types of social relations, and may be unable to control their actions even if he desired to do so. In astronomy, meteorology, and certain magnetic phenomena it is impossible for the scientist to exercise any control over the phenomena to be observed. In other words, he may observe but he cannot experiment. It is common to say that observation may be passive or active, the latter involving experimentation which implies a change in the course of nature by our intervention. In the social sciences experiment is difficult and a large proportion of the information which comes to us is the result of observation unsupported by experiment. Many of the facts have come to us through accidental observation, but it is through observation which is intentional and organized that most of them have been derived.

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[1] See also W. C. Schluter, *How to do Research Work* (Prentice-Hall, Inc., New York, 1926), pp. 61-62.

The extent to which we are able to derive scientific truths from passive, but intentional, observation depends upon the following principal factors: (1) the prejudices and biases of the observer, (2) the limitation of his senses and powers of perception, (3) the limitation of his outlook, that is, the fact that certain circumstances may come to his attention more frequently than others, (4) his ability to comprehend causal relationships or sequences, which is determined by mental, sensual, and by external factors, and (5) his method and degree of accuracy in recording the results of his observations.[2]

In other chapters of this book we have discussed the various types of biases and need not repeat the observations here. It must be clear to the reader by this time that any observation not carried on in an objective manner is useless as a method of securing facts. Under the most ideal circumstances and with the greatest degree of objectivity on the part of the observer it is difficult indeed to arrive at facts. A single observation by an individual, does not, of course, yield facts in a scientific sense. Repeated observations by an objective individual may yield strong probabilities, although these do not afford as sound a basis as if there had been repeated observations by different individuals or single observations by different and independent individuals.

The sensual characteristics of individuals have decided limitations, and it is to be borne in mind that the extent of our knowledge is determined and limited by the power of the sense or senses concerned in the observation. As Jevons has put it: "What we learn of the world only forms the lower limit of what is to be learned, and, for all that we can tell, the processes of nature may infinitely surpass in variety and complexity those which are capable of coming within our means of observation." [3] How do we know that there are not unlimited numbers or modes of perception that we can never feel? How do we know that there are not universes beyond the range of our most powerful telescopic lenses? How do we know that light rays may not suffer a slow extinction in space? Powerful lenses have revealed many things of which we were hitherto ignorant. We are acquainted with some of the limitations of the sense organs but probably have much to learn. We should have learned enough of their limitations by this time to know that because we are not conscious of observing certain phenomena we are not justified in insisting they do not exist. All we can know is what we learn through our sense organs but they may be very defective. There is probably every degree of defectiveness of eyesight, of hearing, of feeling, smelling, tasting, and of perception. Every observer is subject to these limitations. He may be subject to illusions and hallucinations. All of these factors may impair his value as an observer and the value of his observation is determined accordingly.

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[2] On principles of observation, see W. Stanley Jevons, *The Principles of Science* (Macmillan and Co., Ltd., London, 1877), 2d ed., Chap. XVIII, and J. Eigelberner, *The Investigation of Business Problems* (A. W. Shaw Co., Chicago, 1926), Chap. VII.

[3] Jevons, *op. cit.*, p. 404.

Every individual has a limited outlook. He sees more facts, events, and phenomena of certain kinds than of other kinds. He sees through eyes back of which lie experiences colored by limited facts and outlook. The fact that he observes certain events more frequently than others does not prove that other events are not more common. "There is a prevailing fallacy that our ancestors built more strongly than we do, arising from the fact that the more fragile structures have long since crumbled away. We have few or no relics of the habitations of the poorer classes among the Greeks or Romans, or in fact of any past race; for the temples, tombs, public buildings, and mansions of the wealthier classes alone endure. There is an immense expanse of past events necessarily lost to us forever, and we must generally look upon records or relics as exceptional in their character."[4] If these apparent facts are true, it follows that we must have reconstructed many pictures of past societies and events which are greatly at variance with the facts. The observer must be aware of his possible limitations in this respect and exercise great caution in making his inferences and in drawing his conclusions. Wider observation and more extended observations by others may reverse or nullify his conclusions. It is just these things that scientific method will accomplish for the individual when there are sufficient data available to permit the drawing of scientific conclusions. It is for these reasons that an individual's experiences can never be equal to the scientific generalizations drawn from similar experiences of many individuals. Individual observation cannot be scientific in the general sense; yet it frequently is the only available means of gathering data regarding which scientific generalizations have not yet been made.

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[4] *Ibid.*, p. 408.

Observation is undertaken for the purpose of determining sequential relationships between facts or events, relationships commonly thought of as cause and effect relationships. Cause is scientifically used to denote an antecedent stage in a routine of perceptions and in this sense the idea of a first cause is meaningless; it is only a limit, permanent or temporary, to knowledge. These concepts are set forth in greater detail in the following chapter and are the ones advanced by such scientists as Jevons and Pearson.[5] It is clear that an observer must have the proper appreciation of the true nature of cause and effect before he can hope to detect the proper relationships and explain them scientifically.

Jevons, following an earlier scientist, De Morgan, says that there are no less than four modes in which one event may seem to follow or be connected with another, without really being so connected.[6] (a) Instead of A causing B, it may be our perception of A that causes B. For example, a man dies on the day which he has always regarded as his last, from his own fears of the day. The mental condition is the cause of the apparent coincidence. (b) The event A may make our perception of B follow, which would otherwise happen without being perceived. "Thus it was believed to be the result of investigation that more comets appeared in hot than cold summers. No account was taken of the fact that hot summers would be comparatively cloudless, and afford better opportunities for the discovery of comets."[7] (*c*)

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[5] See Jevons, *op. cit.*, pp. 409-415; Karl Pearson, *The Grammar of Science* (Adam and Charles Black, London, 1911), 3d ed., Chap. IV, *passim.*

[6] *Op. cit.*, pp. 409 *ff.*

[7] *Ibid.*, p. 410. In this case A being the cloudlessness of the hot summers and B more comets.

Our perception of A may make our perception of B follow. The event B may be constantly happening, but our attention may not be drawn to it except by our observing A. For a long time it was believed that a full moon causes cloudless nights. Mr. Ellis of the Greenwich Observatory pointed out that there is a general tendency for clouds to disperse at the commencement of night, which is the time when the full moon rises; thus one is impressed when he sees the full moon that the clouds are missing and the coincidence suggests the causal relationship. One also sees a confusion of coincidence with causal connection when the superstitious observe that "whenever a rooster crows company is coming." (d) There may be cases in which B is an antecedent event, but our perception of A, which is a consequence of B, may be necessary to bring about our perception of B. "There can be no doubt, for instance, that upward and downward currents (B) are continually circulating in the lowest stratum of the atmosphere during the day-time; but owing to the transparency of the atmosphere we have no evidence of their existence until we perceive cumulous clouds (A), which are the consequences of such currents." [8]

Observations should be recorded at once and accurately if they are to have any great value. If they are recorded later they are a record of memories of observations and memories are not reliable. The best results are secured when there is a carefully prepared system of recording the data. The definition of the phenomena to be observed should be set forth clearly and in advance; the proper units of measurement, such as statistical units, definitely determined; there should be a careful selection of the basis of sampling if the sampling method is used; and a definite decision concerning the scope of the field to be included in the observations should have been determined in advance if possible. It is implied, of course, that the observer will place himself in a position to observe accurately. The schooled observer approaches his task prepared. In the words of Jevons, ". . . the successful investigator must combine diverse qualities; he must have clear notions of the result he expects and confidence in the truth of his theories, and yet he must have that candour and flexibility of mind which enable him to accept unfavourable results and abandon mistaken views."[9]

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[8] *Ibid.*, p. 411.

Experimental observation

Experiment in the social sciences is not possible in the sense that it is in physics and chemistry where an experiment may be repeated an endless number of times under controlled and practically identical conditions. The problem of control in the social sciences is almost insurmountable and it is impossible to repeat experiments under identical conditions. But it is desirable to approach the methodology of the exact sciences in every way possible, recognizing that in so far as the experimenter falls short of such standards his results are defective. True experiment in the social sciences, therefore, may be disposed of as a question of minor importance since few if any facts may be secured in this manner.

If an experiment is to be undertaken it must be understood that it is in an effort to secure information on sequential relations (cause and effect relationships), and that every time two apparently closely related substances or phenomena are brought together for experimental observation many other substances or phenomena are also present. It is always unsafe to assume that the surrounding substances, circumstances, or phenomena are without effect upon the two phenomena to be observed. The chief and great problem in experiment is to remove, one at a time, each of the conditions which may be imagined to have an influence on the result.[10] Ideally this should be the procedure until each influencing condition has been removed. Practically such an exhaustive investigation is hardly ever possible, certainly not in the social sciences. Four antecedents only would require sixteen experiments because of the possible combinations of factors; twelve antecedents would require 4096, and the number increases as the powers of two.[11] As a result, the experimenter trusts to his tact and experience in selecting the type of experiments he will make and, consequently, may try everything but the proper combination. Experimenters often stumble on to the right combination after long trials and tests.

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[9] *Ibid.*, p. 404. See also Schluter, *op. cit.*, p. 81.

[10] See for further reading, Jevons, *op. cit.*, Chap. XIX, *passim.*

[11] See Jevons, *op. cit.*, pp. 180-189, 418; also Frank L. Griffin, *An Introduction to Mathematical Analysis* (Houghton Mifflin Co., Boston, 1921), pp. 442-444.

One of the most important precautions to be taken in experimentation is to vary only one circumstance or factor at a time, and to maintain all other circumstances rigidly unchanged. "There are distinct reasons for this rule, the first and most obvious being that if we vary two conditions at a time, and find some effect, we cannot tell whether the effect is due to one or the other condition, or to both jointly. A second reason is that if no effect ensues we cannot safely conclude that either of them is indifferent; for the one may have neutralised the effect of the other." [12]

There are other considerations to be borne in mind. Let us suppose that a given combination of factors produces a certain result with other factors eliminated. It cannot be assumed that the apparent causal relationship will manifest itself in the same degree or in exactly the same manner whether certain factors are present or absent. Often it is impossible to remove one factor without disturbing others at the same time. Sometimes factors may be removed without disturbing any others; sometimes all are disturbed in varying degrees; sometimes there are disturbing factors that are entirely unrecognized. The last is always an uncertain source of error. These problems become extremely difficult in the exact sciences; in the social sciences they are impossible of solution. "Experimenting" with social groups, with babies, or other types of persons, cannot reach a very high level of scientific accuracy and those who insist upon the importance of their tests should ponder the wisdom of cultivating greater modesty.

In economics, particularly, bad methodology and loose thinking obtrude themselves. Economists constantly say, "Other things remaining the same, these things are true." From the preceding analysis it must be clear that the economist cannot be certain of the truth of his statements. But in many cases this method, which often is largely that of conjecture, is the best at his disposal. The trouble often lies in his inability or refusal to recognize its shortcomings. Statisticians have undertaken to aid him by applying intricate mathematical methods to his problems. In attempting to determine the combined effect of a number of factors upon a single factor or variable, the principles of multiple correlation are used and the amount of intricate calculation involved is formidable, with debatable results in the end; yet it is an attempt to apply scientific methods to the most ordinary facts and combinations of facts of our everyday life. The statistical methods are too complex and cumbersome to have common use, consequently the economist continues with his loose generalizations.[13] In a similar manner, statisticians use the principles of partial correlation to determine the relationship between a dependent variable and a single independent variable when all other factors are held constant.[14] The calculation involved is equally cumbersome and the final results equally debatable.

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[12] Jevons, *op. cit.*, pp. 422-423.

Truly scientific methodology of an experimental nature has not penetrated far into the social sciences, and to the extent that it has been tried, the methods have been so cumbersome and fraught with so much uncertainty that one cannot be very certain that the net benefits have been in proportion to the energy expended.

Gathering information through interviews [15]

No specific formulæ can be suggested by which all interviews may be conducted satisfactorily, since the objects of interviews, the psychological considerations, and the time and circumstances under which interviews may have to be conducted, differ greatly.

One should make it a practice to be thoroughly acquainted with the writings, if any, of the person to be interviewed; otherwise the research worker may be embarrassed by being reminded that the opinions of the person interviewed could be found on file and the time used in the interview saved.

The personal interview presents a problem largely psychological in nature, and to be successful it is highly important that the interviewer be armed with a plan which takes into account not only the data desired but also the personalities of both the research worker and the individuals to be interviewed.

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[13] On multiple correlation, see H. R. Tolley and M. J. B. Ezekiel, "A Method of Handling Multiple Correlation Problems," *Journal of the American Statistical Association* (December, 1923), pp. 993-1003; Frederick C. Mills, *Statistical Methods* (Henry Holt and Co., New York, 1924), Chap. XIV.

[14] See Mills, *op. cit.*, pp. 501-514.

[15] The type of interview considered here is not the type followed by a field enumerator or investigator covering hundreds of cases per month. The latter type is treated below, pp. 234-249. Here we are concerned with the interviewing of a few important persons who possess valuable information, perhaps are authorities in their fields, and in no sense are to be considered as subjects for case studies.

The investigator should give careful consideration to the convenience of the person to be interviewed. Above all, he should make certain that he is interviewing the proper persons. To do this often involves the securing of proper contacts through intermediate channels that require careful and tactful cultivation. All interviews should be prearranged by telephone or letter in order to insure the convenience of the person to be interviewed. Then a plan for the interview should be developed carefully which recognizes the psychological factors involved in the general situation. The interviewer wishes certain information and he must devise the best methods possible to secure it. He must know how to approach the parties to be interviewed, how to prevent digressions, how to secure definite answers, how to lead the conversation without appearing to, how to secure the desired information indirectly if such indirect approach through questions appears advisable, how to cultivate confidence, and how to end the interview at the proper moment. Quite often it is inadvisable to appear at the interview with notes or formal questions, and in such cases the investigator must have the points to be raised memorized and analyzed before proceeding to the interview. In a similar manner, it may be unwise to take notes during an interview. It interrupts the conversation and often disconcerts the person interviewed. After the interview the answers may be recorded from memory if recorded immediately and if precision is not of paramount importance. The psychological factors are often of importance, and an interview of an informal nature with no note-taking may yield much more information than one in which the investigator is attempting to record every word said.[16]

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[16] *Cf.* J. Eigelberner, *Investigation of Business Problems* (A. W. Shaw Co., Chicago, 1926), Chap. IX; Claude C. Crawford, *The Technique of Research in Education* (University of Southern California, Los Angeles, 1928), Chap. IX; Beatrice Webb, *My Apprenticeship* (Longmans, Green and Co., New York and London, 1926), Appendix B; Bradley Buell, "Interviews, Interviewers and Interviewing," *The Family* (May, 1925), Vol. VI, No. 3, pp. 86-90; Schluter, *op. cit.*, pp. 82-83; George A. Lundberg, *Social Research* (Longmans, Green and Co., New York, 1929), Chap. VII.

Gathering information through correspondence

If letters are employed as a means of securing information the same general principles which apply to the interview are applicable to them in a large measure. Tact and courtesy, combined with a keen appreciation of the psychology of the situation, are important factors in the successful use of letters. But seeking information by letter is not profitable unless the nature of the material required is comparatively simple and general. Letters should be planned with care and should be so worded as to awaken the interest of the recipient. They should be personal, not form letters. Many individuals consider it a violation of the accepted etiquette not to reply to personal letters but have no such compunction with respect to form letters. The letter should state clearly and succinctly the nature and object of the inquiry. It should make a tactful request for information in a simple and brief form and should convey to the recipient in a delicate yet sincere manner the idea that his opinions are of consequence and will be appreciated. Frankness, honesty, and directness, here as in most other cases of human contact, are prized attributes and ordinarily are recognized and appreciated by the recipient. Perhaps the best use of a letter is as an accompaniment to the questionnaire which is superior to the letter as a means of obtaining research data.

Gathering data by means of questionnaires

While the questionnaire is doubtless superior to the letter as a means of securing information, it has been overworked and the results secured are relatively small. To secure any returns worth while, questionnaires must be prepared with the utmost care and precision. Certain well-recognized principles and practices regarding their use have been developed by methodologists in the fields in which their use is most common.[17] The prospective user of a questionnaire should acquaint himself with the accumulated principles and experiences with respect to the use of questionnaires in the field in which he is working. Certain broad principles, which may be summarized, should serve as general guides. Minor adaptations must be made to meet particular problems.

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[17] See, for example, F. Stuart Chapin, *Field Work and Social Research* (The Century Co., New York, 1920), pp. 187-191; Schluter, *op. cit.*, pp. 85-87; A. Hobson, "The Use of the Correspondence Method in Original Research," *Quarterly Publication of the American Statistical Association* (1916-1917), Vol. XV, No. 114, pp. 210-218; Crawford, *op. cit.*, Chap. X; Eigelberner, *op. cit.*, Chap. X; Lundberg, *op. cit.*, Chap. VI.

A careful study must be made of the problem and of the elements in the problem, in order to insure an accurate framing of the questions. Questions should be framed in a manner that will secure facts rather than opinions. It should be possible for the informant to answer "Yes" or "No" or check off the proper answer from the alternative or list of answers already recorded for his convenience. The questions should be developed in a logical sequence in order to stimulate interest and facilitate answers. Terms used in the questionnaire should have meanings clear beyond the least doubt, and if they are subject to more than one interpretation the particular sense in which used should be indicated specifically. The use of such words as moral or immoral, good or bad, rich or poor, intelligent or ignorant, laborer and capitalist, and so on, which are susceptible of different interpretations, should be avoided. Every important term used should be scrutinized with extreme care and its exact meaning determined and explained. The questions should be arranged so that the tabulation of the final results will be simple and comparison of answers made easy at a glance. The fewer the questions, the better.

The actual sending of the questionnaires should be timed so as to be convenient to the recipient and make it easy for him to supply the desired information. Vacation periods and the close or the beginning of the year should be avoided, as should periods when reports are made. If possible, it is desirable to select periods when data or information may be fresh in mind, or when interest in a subject is pronounced.

Whether the questionnaire is printed, multigraphed, or typed depends somewhat upon the elaborateness of the plan and the number of people to be reached. It is of course true that the better the form the better will be the impression that will be made. Unless a heading is so arranged that the name and address of the informant may be inserted in such a manner as to make him aware that a personal appeal is being made, a personal letter should accompany the questionnaire. It probably is a good rule which insists that a letter of explanation and appeal should accompany each questionnaire. If the letter is omitted the questionnaire should have at the head an explanation which is the equivalent of the letter.[18] It is a distinct advantage to have the name and address of the informant at the beginning of the questionnaire. It makes identification easy and avoids the possibilities of omission by the correspondent. Model questionnaires should be submitted to competent critics for suggestions and trial before final printing and use.

Gathering information by indirect methods; the use of staffs

The use of staffs injects an instrumentality between the investigator and his sources, with the result that, being one step removed from the sources, his results cannot be as reliable as they might be if he did all the work himself. It frequently happens, however, that the data are scattered so widely that the use of staffs is imperative if the information is to be gathered at all. The question of how much discretion should be left to staff members is always one of importance. Ordinarily, the less the amount of discretion left with them, the better the results will be. If the director of the research has carefully prepared schedules to place in their hands so that their work is routine, he may use the final results with some degree of confidence. The preparation of "fool-proof" schedules requires the same meticulous care as outlined above for the questionnaire.[19]

The use of schedules, as pointed out by Chapin, permits the investigator to extend his powers of observation beyond those of the observer not so equipped. Schedules make possible systematic studies, intensive or extensive in nature, and insure more quantitative than qualitative data. They objectify the observation of social phenomena, secure standardized recording of unbiased observations by those who gather the data, and make possible the isolation of one element of the problem at a time so that the observer may concentrate his attention upon it.[20]

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[18] For samples, see Chapin, *op. cit.*, pp. 189-190.

[19] It is of course true that the number of inquiries on schedules may be 50-100 without involving great difficulty, provided the questions are brief and enumerators are used. On the preparation of schedules for field work, consult Chapin, *op. cit.*, Chap. VII, and Robert E. Chaddock, *Principles and Methods of Statistics* (Houghton Mifflin Co., Boston and New York, 1925), pp. 387-391.

The principles that should guide in the selection of the inquiries to be printed on the schedules have been summarized by Dr. Chapin substantially as follows: Inquiries should be comparatively few in number; "Yes" and "No" answers are desirable; the recording of observations of qualitative facts should be in quantitative or other objective terms; inquiries should be simple enough to be readily understood; they should be such as may be answered without bias; they should not be unnecessarily inquisitorial; in so far as possible they should be corroboratory in nature; there should be answers listed so that the correct one may be checked; finally, the inquiries should be such as to cover directly and unmistakably the point of information desired.[21]

Field work in the social sciences

Field work may be conducted by the individual himself or by a staff under his direction. He may use (a) the case system, (b) the sampling method, or (c) the census method, that is, complete enumeration. Regardless of the method used, scientific principles of methodology are required in field work. Only in recent years has the study of social conditions begun to be scientific instead of sentimental.[22] Prejudice and superstition still occupy too large a place. The knowledge of the complexity of causation which lies back of social problems discourages painstaking analysis and often defies systematic investigation. It is no small problem for the investigator in field work to objectify his problem and method so that emotional bias can play no part, and to develop a methodology which is so sound that any one else following it will arrive at the same results. Instead, semi-philosophical generalizations usually have been formulated more or less hastily without contact with the facts, and from these glittering generalities deductions have been made with unimportant results.[23] Our body of economic theories has been a constant mark for criticism on this score. Chapin stated the case well when he said: "Impatiently turning aside from painstaking accumulation of facts, social 'science' has inclined to the 'painful elaborations of the obvious.' "[24]

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[20] Chapin, *op. cit.*, p. 156.

[21] *Ibid.*, p. 186.

[22] For an illuminating discussion of the application of scientific methods to a social survey, see Beatrice Webb, *op. cit.* Her Chapters V and VI give an interesting account of the Booth surveys which afforded a scientific basis for the enlightened social legislation in England which soon followed the publication of the facts.

Chapin presents the conventional opinion when he says that science has three tasks: "First, the discovery of the laws of natural phenomena—accomplished by the use of the inductive method; second, the discovery of causes—accomplished by hypothetic inference; and third, the prediction of effects—accomplished by the use of deduction."[25] Field work is presumed to represent an application of the inductive method, and before examining the three different types of field work the implications of the inductive method should be understood to be as follows: (1) the use of a working hypothesis, (2) the collection and recording of the facts of observation according to sound methodology, (3) classification of the recorded facts of observation into series and sequences followed by evaluation in order to secure light on the natural relationships among these facts, and (4) the discovery of some short formula or law to explain the sequence of facts and to express their relationships. Deductions from inductive generalizations established in this manner may form reliable predictions of science. These principles have worked well in the exact sciences, but progress in the social sciences is hampered by the difficulty of making observations under controlled conditions, a fact which explains in a large measure the slow development of the social sciences in this respect.

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[23] See Chapin, *op. cit.*, pp. 4-5.

[24] *Ibid.*, p. 5. *Cf.* William F. Ogburn and Alexander Goldenweiser (Eds.), *The Social Sciences and Their Interrelations* (Houghton Mifflin Co., Boston, 1927), Chap. XV by Warren M. Persons on "Economics and Statistics," Chap. XX by Harold U. Faulkner on "History and Statistics," Chap. XXIII by John A. Fairlie on "Political Science and Statistics," and Chap. XXX by William F. Ogburn on "Sociology and Statistics"; Wesley C. Mitchell, "Quantitative Analysis in Economic Theory," *American Economic Review* (March, 1925), Vol. XV, No. 1, pp. 1-12; Robert E. Chaddock, "Statistics," in Wilson Gee (Ed.), *Research in the Social Sciences* (The Macmillan Co., New York, 1929), Chap. IV; Stuart A. Rice, *Quantitative Methods in Politics* (Alfred A. Knopf, New York, 1928), *passim.*

[25] *Op. cit.*, p. 4.

To make direct observations of social facts calls into play all of the technique of field work. Systematic field work supplies the means of approaching the study of social phenomena in an objective manner. It stands as an intermediate step between the historical and the statistical methods. The latter method is one which supplies social science with a quantitative methodology, including a special technique for classifying and interpreting social data. It furnishes the tool for scientific tabulation and interpretation through the proper use of graphic methods, ratios, averages, index numbers, correlation, and related devices.

We shall now examine briefly some of the most important considerations to be borne in mind in conducting the three different kinds of field work.

Case studies[26]

In so-called case studies the investigator conducts an intensive investigation of individual persons or things. There may be an investigation of one or several cases which may or may not be fair samples of similar cases in a larger group. The purpose ordinarily is to study in detail the characteristics peculiar to the individual case.

In general, the case method, especially when applied to persons, involves the following steps: (a) the first interview with the informant, (b) contacts with his immediate family, (c) the search for other sources of information outside the immediate family circle, and (d) the interpretation and the weighing in their relation to one another of the separate items of information thus gathered.

The investigator in the first interview should give a fair and patient hearing, should endeavor to establish a sound basis for mutual understanding, should seek clues to further sources of information and cooperation, and if he is concerned with social betterment in his cases, he should endeavor to develop self-help and self-reliance within the client's range of endeavor. The interview should not be hurried, and should be held in private with every consideration for the feelings of the one interviewed. Many questions have been answered before they are asked; these need not be asked by a good interviewer. Necessary questions should be framed in order to make truth-telling easy. Questions that can be answered better by some one else are not necessary ones. The client's hopes, plans, and attitude toward life sometimes are more important than any other single item of information.[27] The more the investigator knows of the family history of the individual interviewed, the greater his advantage in the interview.

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[26] *Cf.* Chapin, *op. cit.*, Chap. IV; F. H. Giddings, *The Scientific Study of Human Society* (University of North Carolina Press, Chapel Hill, N. C., 1924), Chap. VI; Mary E. Richmond, *Social Diagnosis* (Russell Sage Foundation, New York, 1917), *passim*; Crawford, *op. cit.*, Chap. V; Lundberg, *op. cit.*, Chap. VIII. The writer is indebted particularly to Dr. Chapin for many of the following ideas.

The second step is to go beyond the client's own view of his situation and interview other members of the family. This implies discernment and a careful appraisal of the situation on the part of the investigator. If it appears advisable to interview some or all of the other members of the family, the same general considerations should be borne in mind as enumerated immediately above. The results should give a fairly accurate picture of the family and of the particular individual or individuals of the family who may be of primary interest. Whether notes are taken in the presence of the interviewed depends upon the general situation. Answers should be recorded immediately after if not during the interview.

The third step is to go beyond the immediate family circle and the client's own view of his situation and investigate such sources as may throw light upon the individual case. These sources may be relatives, school and other public records, former and present employers, neighbors, physicians and health agencies, churches, and acquaintances. This depends upon the circumstances. In general, it is advisable to build up the history of the case first, then seek first-hand observations and supplementary clues.

No effort will be made here to consider the making and keeping of records in case studies of persons. Much depends upon the nature of the problem and whether the information is being gathered by the individual investigator or through staff workers.[28]

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[27] Chapin, *op. cit.*, pp. 78-81; Richmond, *op. cit.*, pp. 132-133.

[28] For a discussion on these points the reader is referred to Chapin, *op. cit.*, pp. 88-89; Georgia G. Ralph, *Elements of Record Keeping for Child-Helping*

In general, observations of the investigator and statements of persons interviewed should be recorded at once or at the earliest possible moment, accurately and in detail. The use of terms which express judgments, such as good, bad, incorrigible, and so on, should be avoided. Specific and definitely defined words should be used. Questions on all points requiring special or expert knowledge to determine should be answered and the answers recorded in a manner that will leave no doubt as to the source of the information. The investigator must have a clear conception of the nature of the evidence which he is recording, whether real evidence, consisting of facts secured by first-hand inspection, whether testimonial evidence which, in turn, may be based upon records of others or upon what others have told him, that is, hearsay evidence, and finally, circumstantial evidence, which includes everything that is not the direct assertions of human beings. An examination of the nature of evidence is deferred until the following chapter.

The technique of field work in the investigation of cases has become highly developed and supplies the proper mechanism for an intensive and many-sided study of the individual. It is one of the methods used in an effort to improve the conditions of human beings. It is an effort at social diagnosis which takes into account the needs, resources, and possibilities of each case. By the collection and comparison of evidence gathered in the manner indicated above, it becomes possible to draw better inferences and to plan more intelligent treatment.

It is to be observed that the term "case study," more or less by convention, is applied in general to detailed studies of individuals and families by sociologists, often for the purpose of improving their condition; and the discussion of the principles to be applied in such procedure has been removed in a large degree from the discussion of the principles applied in the sampling method. The principles of sampling involve the study and statistical manipulation of the characteristics common to many cases, while the so-called case method is concerned with the character-

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Organizations (Survey Associates, Inc., Russell Sage Foundation, New York, 1915), pp. 112-124.

istics peculiar to the individual person, group, or thing. The separation in discussion of the so-called principles of the case study from the principles of the sampling method has had the distinct disadvantage of freeing the workers in case studies from the restraining effects of the recognized principles applicable to proper sampling. In the last analysis, case studies are inadequate samples in so far as an attempt is made to make scientific generalizations. It is not scientific to generalize from a single or a few individual cases. Some kind of semi-rational conclusion may be reached after a detailed study of one or a few cases as, for example, when it is desired to extend help; but the conclusions reached or the help extended cannot be considered as flowing from a genuinely scientific principle.

The same lack of restraint as to the application of scientific principles has been carried over to the case studies of things and institutions as embodied in our recent case books in economics and business. The practice is to present one or a few cases as a basis of study with the implicit or explicit assumption that they will serve as a basis for generalization. At the best they can serve as little more than illustrations of principles already established. As bases for generalization they are entirely inadequate and to attempt such generalization is a violation of the scientific principles applicable to induction. Inductive procedure implies a great number of cases or, as a minimum condition, adequate and representative samples. Practically none of our so-called case books in the social sciences fall within the limits of sound principles of sampling, and they yield little or nothing of scientific value. Case studies become valuable, therefore, as a basis for scientific generalizations only when enough cases are gathered to justify the procedure.

After principles are discovered as a result of the application of the statistical method, the case worker is better equipped to work from the average or typical, as revealed in the statistical method, to the individual case which differs from the typical and which it is desired to treat according to its peculiarities. Case work then becomes more rational and more scientific.[29]

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[29] *Cf.* Rice, *op. cit.*, Chap. IV, "Case Method and Statistical Method in History and Science."

The sampling method in field work; the principle of probability

A careful examination of individual cases as pointed out above will not afford a sufficient basis for broad generalizations. Ideally, the most perfect basis for correct generalizations is found in an examination of every individual case—the theoretical basis of the census method. Ordinarily such a complete survey is not possible, being too expensive in time and money. As a result, investigators resort to a study of samples of the whole with results that, in all probability, are very accurate. The technique of the sampling method is highly developed and involves some of the most fundamental statistical theories. No investigator who uses the sampling method can hope to comprehend its true nature without a study of those parts of statistics relating to sampling, the theory of probability, and the methods of measuring probable error.

The scientific basis of the partial canvass is found in the theory and practice of adequate and representative sampling. It has been established by mathematicians and logicians that it is possible to judge the characteristics of a whole probably and approximately by an examination of fair samples of the whole.[30]

Proper sampling methods enable the investigator to secure a picture in miniature of a larger whole. It can be demonstrated mathematically that there are more samples that agree with the nature of the whole than there are samples that disagree, and if the methods of adequate and representative sampling be applied, a fairly accurate miniature picture will be secured. Professor Chapin illustrates the principle with the following well-known example: Picking two balls at random from a bag containing two red balls (a,b) and two white balls (c,d), what is the most likely color of the pair drawn? The possible combinations of two balls are six: a,b; a,c; a,d; b,c; b,d; and c,d. Thus out of six pairs, there are four pairs of mixed coloring, red and white. In other words, the chances of drawing a pair of different colors are twice as great as drawing a pair of the same color. Hence the chances are greater that the sample will agree with the constitution of the whole, which is half red and half white, than that it will not agree. Consequently it is possible to generalize from characteristics of samples to characteristics of the whole.[31]

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[30] See standard statistical treaties, for example, Chaddock, *op. cit.*, pp. 382-387. For more technical treatment, see his Chapter XI on "Probable Error." A large proportion of all statistical treatises is concerned with the technique of manipulating samples and it is useless to attempt to give the reader adequate citations to the leading authorities in the field. For fundamental theoretical treatments, the reader could profit by reading such studies as W. Stanley Jevons, *The Principles of Science* (Macmillan and Co., Ltd., London, 1877), 2d ed., *passim*; Karl Pearson, *The Grammar of Science* (Adam and Charles Black, London, 1911), 3d ed., pp. 139-150; Chapin, *op. cit.*, Chap. V.

It has been learned in statistics that small deviations from the true average (which shows itself as the mean of the mean of many samples) are more probable than large deviations, that positive and negative deviations (those above or below the average of the means) are about equal, and that extremely large deviations in either direction will not occur. The various means computed from the repeated drawing of samples from the same source of supply will give results which, if plotted on vertical (y) and horizontal (x) axes, will result graphically in the so-called bell-shaped or Gaussian curve of distribution, which is a picture of the usual distribution of chance events. When successive samples of the same kind of data are chosen at random, there is no constant factor causing averages or other computed measures to fall above or below the values which would be obtained if the entire data were included; and, as a result, the averages of the various samples assume the form of a bell-shaped or probability curve. The curve enables the determination of the limits within which variations due to pure chance may occur; and if an average from a sample falls outside these limits it is clear that some factor other than mere chance resulting from sampling is playing an important part. The degree to which an average deviates from the mean (or mode) of the means is a measure of its probable error.

But it is not necessary in statistics to compute the mean of means of the samples and the curve of probable error in order to use the sampling method. Statistical method has demonstrated, as a result of the lessons learned from these principles, that the unreliability of a single average computed from one sampling may be determined, since it can be demonstrated statistically that the less the variability of the individual values from the single computed average, the less will be the variability in the means obtained from many random samples. As a result, statistical method uses certain formulæ on a single average computed from one random sampling, computes the degree of its reliability, and then generalizes from the characteristics of the sample to the characteristics of the whole. The method is scientifically defensible and is the chief means of economizing time when working with extensive data.

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[31] Chapin, *op. cit.*, pp. 117-118. Similar illustrations will be found in Pearson, *op. cit.*, pp. 143-144; Jevons, *op. cit.*, p. 208; Chaddock, *op. cit.*, Chap. XI; and F. W. Westaway, *Scientific Method* (Blackie and Sons, Ltd., London, 1924), 3d ed., Chap. XXIII. For a simplified and condensed treatment of statistical technique, see Crawford, *op. cit.*, Chap. XIII.

It is to be understood, of course, that deviations of an average from the computed true average are not errors in the ordinary sense; errors in statistics are not to be confused with blunders or mistakes. The worker in the laboratory knows that there is no such thing as an absolutely exact measurement. Measurements of the same object repeated with the greatest care do not yield the same results. The most probable value may be obtained by taking the average of the averages of the observations. Error in observation is the difference between the result of an observation and the true or most probable value of the quantity measured. We may not know the true value in the sense used above, but the most probable value may be obtained by averaging, provided the errors of the separate observations are accidental and tend to balance one another. Error, then, is the difference between the observed value and the most probable value. Error means a deviation, not a mistake. These deviations are caused by a great variety of factors which may be under the control of the investigator or which may be accidental and uncontrolled. The two classes of errors are: (1) *constant* errors (persistent, biased, or cumulative), and (2) *accidental* errors (variable, or compensating). In sampling, the constant or cumulative type of error affects the representative character of the sample. This is revealed in questionnaires when only one group replies.

It is possible to combine with accuracy observations which are subject to considerable variable or accidental error, since it is true that when the number of cases is large the errors tend to balance. Often we can increase the number of observations when we cannot make them less liable to this type of error. Accidental errors are distributed about the true value or the most probable value in the bell-shaped or symmetrical form. It is the *uncontrolled* factors as against the *controlled* which produce the curve.

One further observation may be made before proceeding to examine the principles of sampling. Professor Chaddock points out that, "In the social sciences repeated measurements of the same object are not usually taken, but many records are made of the same characteristic common to many individuals, for example, height, weight, age and wage. Some series approximate the symmetrical bell-shaped form, while others assume different forms. In investigations of social and economic phenomena many distributions are not symmetrical in form because, although many factors are associated with a given event, relatively few have a predominant influence. Moreover, these few are of unequal importance and are interrelated in such manner as to produce 'skewed' distributions as the *normal or usual form for particular types of data,* as age, death-rates at different periods of life, income. It is the *unrelated* action of numerous factors which produces the bell-shaped distribution." [32] Pure chance, in other words, must be given free play if the bell-shaped distribution is to result. The tossing of coins in order to tabulate the number of times heads and tails appear should give results growing entirely from chance.[33] Westaway has stated the principle clearly as follows: "Fundamentally, the theory of probability consists in putting similar cases on an equality, and distributing equally among them whatever knowledge we possess. Throw a penny into the air, and consider what we know in regard to its way of falling. We know that it will certainly fall upon a side so that either head or tail will be uppermost; but as to whether it will be head or tail, our knowledge is equally divided. Whatever we know concerning head, we know also concerning tail, so that we have no reason for expecting one more than the other. The least predominance of belief to either side would be irrational; it would consist in treating unequally things of which our knowledge is equal. *We must treat equals equally.*" [34] Further he says: "The more completely we could ascertain and measure the causes in operation, the more would the events be removed from the sphere of probability. The theory comes into play where ignorance begins, and the knowledge we possess requires to be distributed over many cases." [35]

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[32] *Op. cit.*, pp. 212-213.

[33] For an example, see Jevons, *op. cit.*, pp. 208-210. *Cf.* also F. C. Mills, *Statistical Methods* (Henry Holt and Co., New York, 1924), pp. 516-518, and 522, note, and Chaddock, *op. cit.*, p. 214.

The value of this idea of probability is that our outlook and experience may be broadened by predicting from known observations matters which are not of experience. Inductive studies of this nature lead to the formulation of general statements or laws in which the significance of probability is important. In most cases our knowledge does not wait upon certainty but is described in terms of probability which may approach certainty. For example, if out of a total occurrence of ten times an event may occur one way 7 times and another way 3 times, the probability of it happening the first way is $\frac{7}{10}$ and of it not happening that way is $\frac{3}{10}$. And since an event must occur or fail, the probability of it acting both ways is unity, that is, $\frac{7+3}{10} = 1$. A common method of stating the principle algebraically is that if an event may occur in n ways, a of which are successful and b of which are unsuccessful, the probability of a successful outcome (p) is $p = \frac{a}{n}$, and the probability of the failure (q) is $q = \frac{b}{n}$; $\frac{a}{n} + \frac{b}{n}$ = unity and $p + q$ = certainty. If an event has occurred a million times and has never failed, then in a million chances the possibility of the event occurring is $p = \frac{1{,}000{,}000}{1{,}000{,}000}$, or certainty. But the problem is changed slightly if we add an unknown. For example, if the sun has risen 1,000,000 times without fail, what are the odds that it will rise tomorrow? As to the past million we are certain; as to the future we are not absolutely certain. There are two possibilities as to the morrow, one that the sun will rise and one that it will not. In other words, there are two additional possibilities which, if added to the 1,000,000 already passed, total 1,000,002. Therefore the probability of the event occurring tomorrow are 1,000,001 out of a possible 1,000,002, or $\frac{1,000,001}{1,000,002} = .99999+$, the formula being $\frac{p+1}{p+2}$. The rule for this so-called inverse method is stated as follows: "To find the probability that an event which has not hitherto been observed to fail will happen once more, divide the number of times the event has been observed increased by one, by the number increased by two."[36] It is clear that on this hypothesis there would be practical certainty with regard to the rising of the sun being repeated. In such cases where the measure of probability may approach the infinite, probability merges into absolute certainty. Probable and provable become identical terms. The pedant, of course, may insist that we do not *know* that the sun will rise tomorrow but that the probability is very great that it will.

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[34] *Op. cit.*, pp. 260-261.

[35] *Ibid.*

In dealing with the usual averages of samples it is not strictly accurate to state as exact what the facts do not warrant. The concept of probability enters to determine the degree of reliability. The variation which may be expected due to the chance conditions of sampling raises the question of the adequacy of the sample, not its representativeness. We shall now examine the principles of sound sampling.

Scientific methods of sampling

(1) The number of samples drawn must be adequate. In homogeneous data there is less tendency for the sample to vary from the outstanding characteristics of the whole than in heterogeneous material. Therefore in the latter the number of samples drawn must be larger than in the former type of data. It requires some analysis of the problem and of the data to determine just how many samples should be taken. They must be sufficient to permit representation of each characteristic of the whole. Measures computed from samples approach the values obtained from the whole as the sample is increased, not directly with the increase

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[36] Westaway, *op. cit.*, p. 267. See also Jevons, *op. cit.*, pp. 257-259, and Pearson, *op. cit.*, p. 141, and the discussion of Warren Persons in Ogburn and Goldenweiser (Eds.), *op. cit.*, pp. 164-166 treating of "Inverse Probability."

in the number of cases but in proportion to the square root of the number of cases in the sample. This requires that in order to cut down the amount of variability by one half, not twice the number of items is required in the sample but four times the number.[37] "When the sample is of a given size, the expected deviation of the calculated values because of chance variation due to sampling, may be described in terms of probability." [38]

But it is possible to have the size of the sample adequate and the probable error small and yet have it fail in representativeness. This leads us to the second requisite of good sampling.

(2) The sample must be representative. For a sample to be representative, the problem must be analyzed into its constituent parts and samples so drawn that each element of the whole may be represented as proportionally as possible. Some writers insist that to secure representative samples the principle of random sampling must be employed. Dr. W. I. King, who takes a somewhat different position, has pointed out to the writer that by numerous experiments he has demonstrated that proportional sampling gives much smaller errors than does random sampling, and that the random method is useful either within classes or when proportional selection is impossible.

Random sampling, when used, is not careless sampling. An intelligent classification of the factors involved in the whole precedes the sampling. Care is then taken that the smallest sub-groups are represented by sufficient samples to represent adequately the variations which appear in the group. A sufficient number should be taken from each sub-group to give it its proportionate weight in the whole.[39] "In respect to both randomness and adequacy, sampling commonly presents serious problems requiring marked statistical insight and is satisfactorily dealt with only after considerable experience in statistical work. . . . When properly safeguarded, sampling is one of the most important labor-saving practices in statistical inquiry." [40]

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[37] Chaddock, *op. cit.*, p. 237. *Cf.* Lundberg, *op. cit.*, Chap. V.

[38] Chaddock, *op. cit.*, pp. 383-384.

[39] See Chaddock, *op. cit.*, pp. 384-387.

[40] Edmund E. Day, *Statistical Analysis* (The Macmillan Co., New York, 1925), p. 32. Dr. King thinks Dr. Day should have used the term "proportionality" rather than randomness.

The mechanical aids to the proper procedure in sampling are to number all objects in a lot and draw the numbers by roulette, or draw from a bag. Or the items may be arranged in alphabetical order or in order of size and then certain ones drawn such as the 10th, 20th, 30th, and so on, determined by the number of samples desired.

After the samples have been collected, the procedure in the processes of tabulation, analysis, and interpretation, involves some of the most important statistical methods. These cannot be treated even briefly within the scope of this book. At this point the investigator must secure the services of a competent statistician if he himself is not trained in statistics.

The census method; complete enumeration

Of all the means which the investigator has at his disposal in dealing with quantitative facts, complete enumeration is the most ideal if conducted properly; but it is rarely at the disposal of the individual investigator in the social sciences. Such a method is reserved to a large extent for governments. It usually involves a large corps of trained enumerators guided by carefully prepared and detailed schedules and instructions. Ordinarily, complete enumeration is a process entirely too expensive for the individual investigator to use; he must use devices less ideal.

Enumeration as a method is applicable to all the facts which have in common a definite characteristic which can be used for counting them. There is a tendency to confuse enumeration with measurement. Measurement is concerned with importance.[41] The number of people in one country as compared with the number of people in another cannot be taken as an indication of its importance. In an enumeration the figures merely indicate the number of cases in which a given characteristic appears. These cases may have any number of other characteristics; they do not necessarily represent a homogeneous whole. Care should always be taken to make certain that the things to be added and divided have a common characteristic or denominator. Determination of a common denominator is not always simple. Statisticians, for example, in their attempts to measure different degrees of dispersion in different series of variables use the coefficient of variation, expressed in such terms as

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[41] See A. D. Ritchie, *Scientific Method* (Harcourt, Brace and Co., Inc., New York, 1923), Chap. V on "Measurement," and Walter Libby, *An Introduction to the History of Science* (Houghton Mifflin Co., Boston, 1917), Chap. VII, "Science as Measurement."

$$\frac{\text{standard deviation (S. D. or } \sigma) \times 100}{\text{mean}},$$

or

$$\frac{\text{average deviation (A. D.)} \times 100}{\text{median, mean, or mode}}.$$

While such terms used to express common characteristics may mean little or nothing to those not trained in statistics, the careful investigator must know that they exist and in such cases he should seek the advice of the statistician. By taking thought he should be convinced that care must be exercised in looking for common characteristics. In any event, he should not make the error credited to the pauper who sought aid and sympathy by placarding himself with the following: "Please help the poor! Have five children, was in four battles, had three wounds, total twelve."

Measurement as contrasted with enumeration is concerned with importance in some form—with time, length, depth, width, weight. Here a common unit is necessary and, when used, equal numbers represent identities. A common error in measurement appears when the careless and untrained use monetary units as a unit for measurement. This unit is not always what it seems; it changes over periods of time and yet it is quite the usual practice to compare values at different periods in terms of some monetary unit, which in fact is not a common denominator. To use such units intelligently the investigator should have a knowledge of index numbers as treated in the standard statistical treatises.

Whenever things are susceptible of enumeration or measurement with precision, they should be so enumerated or measured if it is reasonably possible. A guess has little value.

After the investigator has completed all the preceding steps in gathering data it remains for him to classify, analyze, and interpret them, after which he is ready to prepare his manuscript. The stage of classification, analysis, and interpretation, in many respects, is the particular one in research which tests in the most striking manner the critical faculties of the scholar.

CHAPTER XI

CLASSIFYING, ANALYZING, AND INTERPRETING THE DATA

Classifying the data

The study of documents and the gathering of evidence, during which time the principles of criticism were applied, yield in the main only isolated facts. This is true despite the fact that the worker has been occupied in constructing a tentative outline of his problem from the earliest stages of his research. In order to organize the data into a body of science it is necessary to classify all raw data, analyze it, and engage in certain constructive work commonly called synthetic operations.[1] Synthesis is an important part of methodology.

The research worker must understand clearly that the very essence of science is proper classification.[2] It is the manifestation of the attempt of the mind to rationalize things. From the earliest times the human mind has endeavored to find order in the world. Early and popular classifications of apparently related facts have been those implicit in language. To quote from Wolf, ". . . in popular language and thought a whale is just a fish because it lives in water, coal is just a mineral because it is found in a mine, and a sea-anemone is just a vegetable because it rather looks like it." [3] Scientific investigators usually take such popular classifications as starting points and work out scientific classifications. For example, science would classify the whale as a mammal, coal is found to consist of fossilized plants, and a sea-anemone is an animal.[4]

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[1] See F. W. Westaway, *Scientific Method* (Blackie and Son, Ltd., London, 1924), 3d ed., Chap. XVIII; Langlois and Seignobos, *Introduction to the Study of History* (Henry Holt and Co., New York, 1898), Bk. III, Chaps. I-IV; Fred Morrow Fling, *The Writing of History* (Yale University Press, New Haven, Conn., 1920), Chaps. VI-VII; W. C. Schluter, *How to do Research* (Prentice-Hall, Inc., New York, 1926), Chaps. XI-XII; J. Eigelberner, *Investigation of Business Problems* (A. W. Shaw Co., Chicago, 1926), Chap. XII.

[2] Inseparable from classification, of course, is definition.

[3] Abraham Wolf, *Essentials of Scientific Method* (George Allen and Unwin, Ltd., London, 1925), p. 29.

Classification is the only way to discover the proper order of things. It is an attempt to show the actual kinship, the objective relationship, between various kinds of things. The scientific classification is called, by Wolf, the *natural* classification, as contrasted with the *artificial* classifications which frequently are made for practical purposes. To illustrate, he points out that the earliest classifications tended to be based on man's practical needs in relation to the objects concerned and were those usually implied in the language. Even after this stage was passed, classifications, owing to insufficient knowledge, usually were based on superficial and minor attributes. What is really sought in the truly scientific classification is that things as a whole should be taken into account, with all their important attributes. "All classifications are based on the presence or absence, or the presence in varying degrees, of certain attributes; and those classifications are the most natural in which the attributes selected as the bases of the classifications are such as carry with them the presence or absence, or the presence in varying degrees, of other attributes."[5] Things may be classified into small, larger, and still larger classes; and in so far as the ideal is attainable, the facts investigated in a science can be conceived as members of an orderly scheme of things. To achieve this ideal successfully assumes an extensive knowledge of a subject, not only in one field, but also in many related fields. Probably the best single rule for proper classification is to place together in classes the things that possess in common the greatest number of attributes.[6]

The artificial classifications are those made for special or practical purposes—those made not from the standpoint of the objects themselves, but from the standpoint of the practical needs of man. Wolf points out that the more restricted the purpose for which the classification is made, the less informing is it likely to be about the essential objective character of the objects so classified, and he cites an extreme case as taken from *Punch*. "An

[4] Wolf, *op. cit.*, p. 29.

[5] *Ibid.*, p. 32.

[6] *Cf.* Westaway, *op. cit.*, p. 216.

old lady went on a railway journey with a menagerie of pets. The railway porter told her what the fare would be for her dogs, but did not know the tariff for her other pets, so she sent him to the station-master to inquire. When he returned he said: 'Station-master says, mum, as cats is dogs, and rabbits is dogs, and so is parrots, but this 'ere tortoise is a hinsect, so there ain't no charge for it.' "[7] Quite clearly, while this classification may have met the needs of the railroads, it was not made in the interests of science.

Analyzing the data

A scientific analysis of data involves all the mental processes necessary to find laws, principles, and truth. All the known principles of logic are employed in an effort to find a clear path through perplexities. The confusing associations of ideas must be inspected carefully in order to test the validity of the associations. The classified data which are to be analyzed are classified according to the associated ideas that seem to afford guidance until a more careful analysis can be made, after which a more scientific classification may follow. It naturally follows that classification and analysis may be conducted more or less simultaneously; it is difficult at times to say that one has preceded the other, although it is quite conventional to consider classification as the first step.

Unless the analysis is sound the constructive reasoning which follows also will be erroneous. The facts hidden in the classifications must be disentangled. It has been said that "progress in scientific investigation depends much more on that severe and discriminating judgment which enables us to separate ideas that nature or habit has closely combined, than on acuteness of reasoning or fertility of invention."[8] Analysis enables the scientist to distinguish between accidental and permanent connections between phenomena, to determine which is cause and which effect (in the sense of the order of events in the routine of perceptions), to arrange complex phenomena in various combinations in order to observe relationships, to break down habits of thought and associations and follow new paths of thought when the evidence is suggestive, to observe the manner of operation of known laws

[7] *Op. cit.*, p. 34.

[8] Westaway, *op. cit.*, p. 225.

and to determine new ones, and to break up complex phenomena into their constituent elements for more detailed analysis. It is difficult to lay down any fixed set of rules for guidance in analysis because of its great complexity. The procedure of analysis comprehends every principle of methodology and can be successful only when conducted in a careful manner by those experienced in the methods of science.

The nature of evidence

The scholar must be aware of the nature of the evidence with which he has dealt. This implies that he understands the nature of evidence itself. Evidence is the ground for belief or judgment; it is the basis for inferences. It is of every degree of reliability as to the ultimate fact or facts involved. We may speak of real or genuine evidence when it consists of facts observed directly. While several observers may draw different inferences from the same raw materials or observed facts, the latter constitute real evidence. We defined a fact in Chapter I as an act, event, or circumstance which has been or is. Facts may assume the form of objects, statements, events, or concepts. Evidence is the basis for judging facts, and if based directly upon the facts themselves, as in the case of direct observation of the facts, we call the evidence real evidence, regardless of the kind of inference that may flow from it. Obviously the accurate application of sound principles of inference to real evidence should yield the most reliable type of generalization.

If, instead of direct observation of objective facts, we have a report of these observations, we are dealing with testimonial evidence. The value of testimonial evidence depends upon the number, independence, and quality of the reports rendered. One bit of testimonial evidence cannot be equal to one direct observation, but, as already pointed out elsewhere, most research in the social sciences is dependent upon testimonial evidence.

Testimonial evidence further may be an assertion based not upon direct observation but on what others have said, in which case it becomes hearsay in nature. This is the weakest form of testimonial evidence and should be used with caution. These assertions must be shown to be true before the point at issue can be established.

We may pass next to circumstantial evidence which includes everything that is not the direct assertions of human beings. While it usually is rated as of lower value than the other types of evidence, it often gains cumulative effect by adding item to item, and it has the advantage of not depending for its weight upon the elusive personal trustworthiness of a witness.[9]

The scholar's interest is in the determination of facts, or truths in the sense of verified facts; and he is compelled to use different kinds of evidence as a basis for his inferences which can be productive of truths only when his inferences are based soundly upon facts. His duty is to question and analyze his evidence, determine its true nature, and thereby reach behind it to his facts. Inference may be employed then with some degree of certainty. In the social sciences too many inferences are drawn from inconclusive evidence.

The use of evidence by the scientist is not to be confused with the use of evidence in law. Rules of evidence in law are designed to establish the truth bearing upon the questions in dispute. Courts have an immediate purpose to serve. They concern themselves with that evidence which may enable them to render a decision in the case. If the evidence appears inconclusive, the plaintiff's case is lost. The courts render a decision one way or another but do not attempt to go more deeply into the facts. A scientist, on the other hand, has no such immediate alternative confronting him. He may suspend judgment until he can investigate the facts. Usually he may do this without harm to any one; the courts cannot do this. The burden of satisfying the courts rests upon the parties involved; and if they fail in this the courts must render their decisions accordingly or fail in their duty. Courts lay down formal rules as to what shall be accepted as evidence in order to expedite justice and to give the parties in court notice as to the type of evidence that must be produced to satisfy the court. In science, particularly in the social sciences, the principles are not so rigidly formulated; they are broader and permit the admission of any kind of evidence which may yield facts. To follow such a broad interpretation would subject courts to all kinds of irrelevancies.[10]

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[9] See F. Stuart Chapin, *Field Work and Social Research* (The Century Co., New York, 1920), pp. 75-76; H. B. George, *Historical Evidence* (Clarendon Press, Oxford, England, 1909), Chap. I.

An interesting analysis of the nature of circumstantial evidence is found in that series of mystery stories by Mr. Willard Huntington Wright who writes under the *nom de plume* of S. S. Van Dine. See especially *The Benson Murder Case* (A. L. Burt Co., New York, 1926), *passim*, but particularly pp. 72-76, 105-111. Equally delightful and clever comments on the dangers of circumstantial evidence are found in Mr. Van Dine's other mystery stories, such as the Canary, Greene, Bishop, and Scarab murder cases.

The different types of testimony available in the so-called exact sciences, as contrasted with those available in the social sciences, have been treated at sufficient length elsewhere to make it unnecessary to repeat the observations here. In general, the social sciences rest primarily upon indirect or testimonial evidence, while the exact sciences rest upon direct or observational evidence.[11]

Constructive reasoning or inference

After the facts, based on different kinds of evidence, have been gathered, classified, and analyzed, there are always gaps that must be filled. This is done in the exact sciences by means of additional experiments or observation. In the social sciences, depending upon indirect methods, it is done ordinarily, if at all, by constructive reasoning or inference.[12] The process of inference consists in inferring or carrying to a new instance of a phenomenon whatever we have previously known of its like, analogue, equivalent, or equal.[13] The general rule of inference is that in so far as there exists sameness, identity, or likeness, what is true of one thing will be true of another. This type of reasoning is what Langlois and Seignobos call the positive mode of constructive reasoning.[14] It begins with a fact established by the documents or observation, and infers some other fact which the documents or observation do not indicate. The great difficulty in applying the principles of inference consists in determining whether there is a sufficient degree of likeness or identity to justify an intended inference. Requisites of a scientific mind are the capacities to discriminate and detect identities.

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[10] On legal evidence, see J. B. Thayer, *A Preliminary Treatise on Evidence at the Common Law* (Little, Brown and Co., Boston, 1898); Ezra R. Thayer, *Observations on the Law of Evidence,* address before the Rhode Island Bar Association, Providence, Dec. 7, 1914 (Ann Arbor Press, Mich., 1915), reprinted from the *Michigan Law Review* (March, 1915), Vol. XIII, No. 5; J. H. Wigmore, *The Principles of Judicial Proof* (Little, Brown and Co., Boston, 1913); J. H. Wigmore, "The History of Hearsay Rule," *Harvard Law Review* (1904), Vol. XVII, pp. 437-458.

[11] See Webster A. Melcher, *The Dangers of Documentary Evidence and Some Methods of Protecting Against Them* (Philadelphia, 1912); Charles S. Morgan, "A Study of the Psychology of Testimony," *American Institute of Criminal Law and Criminology Journal* (Chicago, 1917), Vol. VIII, pp. 222-232.

[12] On this subject consult Langlois and Seignobos, *op. cit.*, Bk. III, Chap. III. See also Eigelberner, *op. cit.*, Chaps. XI, XV.

[13] Jevons, *op. cit.*, p. 9.

[14] See *op. cit.*, pp. 253-261. See also Fling, *op. cit.*, Chap. VI, *passim.*

The process of inference is employed when samples are used as a basis for generalization. It is inferred that the whole is identical with the samples if the latter are selected according to sound methodology, or that the identity of two wholes may be tested by comparing the samples from the two wholes. The reliability of such inference is manifested in the theory of probability. The statistical devices developed to measure the degree of probability are wholesome checks upon those who make hasty or ill-considered inferences from inadequate or unrepresentative samples.

Inference is applied when common measuring units like foot, pound, gallon, or price are used as a basis for inferring the equality or equivalence of things. Two objects with the same price may be assumed to have the same value; those that are one foot long are assumed to be identical in length. The employment of this substitutive process enables us to make measurements beyond the powers of our senses.

The process of constructive reasoning or inference sometimes rests upon the analogy between present and past humanity. In the present we see that certain events are connected with others and assume that the connection was the same in the past. Conjectural history, always a dangerous and unreliable type of "history," is an excellent illustration of this type of reasoning. It is common among those economists, political scientists, sociologists, and historians who have no keen appreciation of scientific principles in historical method. Many writers have written freely of the early social, political, and economic order in the development of different peoples just as though their statements rested upon established facts rather than upon conjecture. Such procedure is to be condemned as an unscholarly method.

In order that the conclusion resulting from so-called positive reasoning may be certain, two conditions are necessary: (a) One is a general proposition derived from human affairs which is strictly accurate, and the facts which it declares to be connected must be so connected that the one is never found without the other. Unless the certainty of this general proposition is easily and definitely established there can never be absolute certainty as to the validity of the conclusion. (b) If this general proposition goes into detail, then to employ it there must be a detailed knowledge of the particular fact.[15]

Deductive and inductive reasoning

The processes of inference may be distinguished according to whether the methods are inductive or deductive. Deduction consists in passing from more general to less general truths; induction consists in passing from less to more general truths. In the words of Jevons, "In deduction we are engaged in developing the consequences of a law. We learn the meaning, contents, results, or inferences, which attach to any given proposition. Induction is the exactly inverse process. Given certain results or consequences, we are required to discover the general law from which they flow."[16] He continues: "In a certain sense all knowledge is inductive. We can only learn the laws and relations of things in nature by observing those things. But the knowledge gained from the senses is knowledge only of particular facts, and we require some process of reasoning by which we may collect out of the facts the laws obeyed by them. Experience gives us the materials of knowledge. When we possess such knowledge, in the form of general propositions and natural laws, we can usefully apply the reverse process of deduction to ascertain the exact information required at any moment. In its ultimate foundation, then, all knowledge is inductive—in the sense that it is derived by a certain inductive reasoning from the facts of experience."[17]

Jevons also insists, and correctly in the opinion of the writer, that all reasoning is founded on the principles of deduction, and that induction is really the inverse process of deduction; that there is no mode of ascertaining the laws which are obeyed in certain phenomena unless we have the power of determining what results would follow from a given law; and that when we gain the results of induction they will be useless unless we can apply them deductively.[18]

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[15] Langlois and Seignobos, *op. cit.*, pp. 257-261.

[16] *Op. cit.*, p. 11. See also Eigelberner, *op. cit.*, Chap. XVI.

[17] *Op. cit.*, pp. 11-12. For a convenient account of the guiding principles of induction as applied by such methodologists as Bacon, Newton, Herschel, Mill, Whewell, and Welton, consult Westaway, *op. cit.*, pp. 178-191.

Deductive reasoning is direct in nature if we apply to certain premises which are true the so-called rule of substitution. This rule is that for any term occurring in any proposition one may substitute the term which is asserted in any premise to be identical with it. Indirect deductive reasoning is a method which points out what a thing is by showing that it cannot be anything else. It employs what is sometimes called the Law of Contradictions, which rejects from further consideration all terms which imply the presence and absence of the same quality.

The research worker will find certain classifications of his own or of others with which he must deal. These classifications were made on the basis of certain common characteristics. The characteristics which are not common are ignored. In careful constructive reasoning which may be deductive in nature, it often is necessary to look carefully to the characteristics which are not common to all items in the general class. In other words, the generalization is broken down into its constituent parts, which have differences. The scholar always looks carefully beyond generalizations to differences in his analysis. Jevons calls this process the employment of disjunctive propositions.[19]

Regardless of whether the investigator is acquainted with any specific formal divisions of deductive reasoning as set forth by any particular logician, he must be aware that deductive reasoning is employed in his constructive reasoning and exercise caution accordingly. It may be conducive to greater meticulousness in methodology if he is familiar with the formalistic classifications of the logical processes.

Investigations and reasoning which employ the inductive processes are more difficult and more complex than those which use the deductive. Truths to be ascertained are more general than the data from which they are drawn. Given certain events or facts, the problem becomes one of determining the laws underlying. In deduction it is comparatively easy to determine what effects will follow from a given law, but to reverse the process is comparatively difficult. It has been said already that induction is the inverse process of deduction and is more difficult as a result. Inverse processes are usually difficult and often beyond human capacity. It is easy to scramble eggs but to unscramble them is impossible. Or to use Jevons' illustration: "Given any two numbers, we may by a simple and infallible process obtain their product; but when a large number is given it is quite another matter to determine its factors. Can the reader say what two numbers multiplied together will produce the number 8,616,460,799? I think it unlikely that anyone but myself will ever know; for they are two large prime numbers, and can only be rediscovered by trying in succession a long series of prime divisors until the right one be fallen upon. The work would probably occupy a good computer for many weeks, but it did not occupy me many minutes to multiply the two factors together."[20] The difficulties encountered in the solution of algebraic equations afford another illustration. These illustrations should serve as a partial explanation at least for the difficulties involved in the use of the inductive method. The limitations of the human mind are such that an observer is unable to compare by a single act any larger group of objects with another large group. He is compelled to treat complex groups by successive acts of attention. In making comparisons he must understand the common characteristics of each group compared; in the same manner he should understand the differences. Identities may be complete, that is, all characteristics in one group may be found identical in another, or the identities may be partial only. Doubtless the great mass of our so-called truths flow from partial identities. Our lives are run on the principle of approximations. Most inductive processes are imperfect. To be perfect, all objects or events which can possibly come under the class treated must be examined. In most cases this is an impossibility. We satisfy ourselves with approximations and imperfections. The extent to which this is done, however, is probably a fairly accurate measure of the degree of scholarship of the scholar. Every scholar must understand that the results of imperfect induction can never yield more than probabilities. All inferences and predictions which reach beyond their data are purely hypothetical and proceed on the assumption that new events will conform to the conditions detected in our observation of past events.

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[18] *Op. cit.*, p. 12. For a detailed treatment of the principles of deduction see for example his Chaps. IV-VI. On induction see his Chaps. VII, XI, XII. On both inductive and deductive methods, see also standard treatises on logic.

[19] *Op. cit.*, Chap. V.

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[20] *Op. cit.*, pp. 122-123.

Use of inference requires certain precautions

While the use of inference is a legitimate and necessary method of acquiring additional facts for the purpose of filling the gaps in our data, it requires great care in its use. If the constructive reasoning is incorrect the method fails, and of all the methods used in acquiring historical knowledge, none is more difficult to employ correctly. Langlois and Seignobos point out a number of cautions that should be employed in order to safeguard a writer in the use of constructive reasoning.[21]

(1) When constructive reasoning is combined with the analysis of the document, care should be taken lest one's own thoughts be credited to the author of the document under examination. It is always to be borne in mind that in studying any author in an effort to arrive at his facts there is a continuous struggle going on between what the author really meant to convey and what the reader tends to read into the author's statements. If constructive reasoning is employed at the same time that a text is being analyzed, there is a probability that the reader will make the author say things he did not say. A careful system of note-taking does much to eliminate the danger of confusion if the investigator engages in constructive reasoning at the time he is gathering data. But the scholar is not as well qualified to engage in constructive reasoning at this early stage of his work as he is after all his data have been gathered, the evidence surveyed, and the problem seen both in its entirety and in detail. Langlois and Seignobos may be right in principle when they insist that constructive reasoning be separated from the analysis of the documents, although it is doubtful if this can be done in practice. It doubtless should be

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[21] *Op. cit.*, pp. 252-254. The writer's treatment of this subject follows in general but not exactly the discussion by Langlois and Seignobos, to whom he is much indebted. On some points the writer believes their position is so extreme that it is unworkable.

separated as far as possible from such analysis and deferred until the final stages of the work are reached. This constructive, creative labor is the capstone to the intellectual labor of the scholar and cannot be of sterling quality unless the major part of it comes after all the evidence is in. Compiling a tremendous amount of data and organizing it into a logical whole has its value and, in fact, may show a standard of work superior to what most of the present-day so-called scholars produce; yet the best work involves one more important step—meditation, constructive thinking, a weighing and evaluating of the final results, followed by a scholarly presentation. Herein lies genuine scholarship.

(2) The facts obtained by the careful examination of texts should never be confused in the scholar's mind with the results obtained by constructive reasoning. When certain facts are set forth as a result of inference, the precise method of obtaining them should be indicated in order that subsequent readers may distinguish the facts secured by reasoning from those found in documents or elsewhere. Accurate footnote citations or carefully worded statements in the text should be used to make clear to the reader the actual sources of the ideas presented.

(3) Unconscious reasoning must not be permitted because of the chances for error. The writer must keep his mind fully alert to all possibilities of error in employing constructive reasoning, and this he cannot do if he permits himself to employ the method unconsciously. During times of mental and physical weariness, unconscious constructive reasoning creeps in unnoticed. Distraction and haste likewise present an inviting condition for its appearance.

(4) If constructive reasoning leaves any doubt, no attempt must be made to draw a final conclusion. The point at issue must be left in the conjectural stage and clearly indicated as such, in order to distinguish it from the facts and conclusions definitely established.

(5) It is not permissible to return to a conjecture and endeavor to transform it into a certainty. Reflection upon a conjecture causes one to become familiar with it and may result in a feeling that it is better established than was first thought. Familiarity with a conjecture must not be confused with verification.

(6) It is not always safe to infer that, because a fact is not mentioned in a document or revealed by some other remains, it did not exist. This type of inference is what Langlois and Seignobos have called the negative mode of reasoning, or argument from silence, in contradistinction to the positive mode mentioned above. An inference that an event did not occur because not mentioned can be supported only under certain conditions. If the inference is valid it is necessary (a) that there be no documents or other evidence now in existence which mention the fact and also that there never were any. If documents were lost nothing can be concluded in this manner. (b) The fact must have been of such a nature that it could not fail to be observed and recorded. But here the question must be raised whether the fact might have been observed but failed to be recorded in the existing documents. For instance, individuals and groups ordinarily do not include facts in documents which are damaging to themselves. The only place where such reasoning is conclusive is where there is silence as to the fact in a document in which the fact naturally would be mentioned. The two rules that should guide in this case are: (1) The author of the document must have had the intention of recording all the facts of the same class and must have been acquainted with all of them. (2) The fact, if it were such, must have affected the author's imagination so forcibly as necessarily to have entered into his conceptions. In these two cases only is reasoning from silence valid.

In a similar manner it is not to be inferred, because we have in our possession certain remains and not others, that others may not have existed. The remains in our possession may be the exceptional things that have survived; the common ones may have perished. Careful study supported by corroboratory evidence may be necessary to justify an inference based upon the absence of a thing or silence regarding it.

In the words of Langlois and Seignobos, "We must be prepared to realise but rarely the conditions of a certain inference; we are too little acquainted with the laws of social life, and too seldom know the precise details of an historical fact. Thus most of our reasonings will only afford presumptions, not certainties. But it is with reasonings as with documents. When several presumptions all point in the same direction they confirm each other, and end by producing a legitimate certitude. . . ."[22]

The use of hypotheses[23]

All inductive investigations involve the use of hypotheses. We gather facts; then we form an hypothesis to explain their relationships. If the explanation is successful the value of the hypothesis is demonstrated. "In the invention and treatment of such hypotheses, we must avail ourselves of the whole body of science already accumulated, and when once we have obtained a probable hypothesis, we must not rest until we have verified it by comparison with new facts."[24] To lay down detailed rules for the use of hypotheses in the inductive method is not possible, except as part of logical methodology.[25] This must be inferred from the preceding discussion on the nature of inductive method, which implies that the investigator must make an exhaustive arrangement of facts in all possible orders and, as pointed out in the preceding chapter, this is not easily done. It is the method, however, by which the first simple steps in an incipient branch of science are taken. It is the reason why the alchemists, often men of keenness of intellect, were able to make but few additions to scientific knowledge throughout a period covering many centuries. It explains also why the chemists, physicists, and other scientists in recent times have discovered more truths in a very few years than were produced by the early scientists in centuries. With the way opened and with the accumulation of past experiences from which to profit, it is easier for modern scientists to formulate hypotheses which fall within the rational limits of the existing body of scientific laws. Hypotheses come easily and are valuable starting points. Sometimes coincidences will force them upon the attention. The Baconian method of induction apparently afforded little room for hypotheses. But the great scientists do not follow the pure inductive method; hypotheses occupy a very important place in their procedure, and correctly so. It always is desirable in observation that our attention be guided by theoretical anticipations. It is assumed of course that any hypothesis which cannot be demonstrated will be discarded, but the mere confutation of an hypothesis results in the accumulation of some information—information that the hypothesis is without validity. An hypothesis is a good one only when it is in agreement with the facts. A single absolute, not merely apparent, conflict between fact and hypothesis is fatal to the hypothesis.

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[22] *Op. cit.*, pp. 260-261.

[23] See Jevons, *op. cit.*, Chap. XXIII; Westaway, *op. cit.*, Chap. XXI; and Eigelberner, *op. cit.*, Chap. XVII.

[24] Jevons, *op. cit.*, p. 504.

[25] On this aspect of the question the reader should consult standard treatises on logic. Westaway lays down three conditions of a good hypothesis: (1) It must allow of the application of the deductive reasoning and the inference of consequences capable of comparison with the results of observation. (2) It must not conflict with any laws of nature which we hold to be true. (3) The consequences inferred must agree with facts of observation. *Op. cit.*, pp. 245-246.

Occasionally scientists are called upon to describe or name things of which they have no exact knowledge and of which all existing hypotheses may be in a state of doubt. By analogy, strange phenomena are described in terms of things understood although scientists are aware that the analogy may be overturned at any time. Jevons applies the terms "descriptive hypotheses" to this method of furnishing names and cites as an example the common statement that electricity flows since the rapidity and facility of its movements suggest the motion of a fluid. These theories are nothing more than convenient methods of describing phenomena and are not to be looked upon as valid.[26]

The nature of cause and effect; probability[27]

The reasoning of a scholar will not be reliable or his conclusions sound unless he disabuses his mind of the popular conception of cause and effect and adopts the more scientific one set forth by such scholars as Jevons, John Stuart Mill, and Pearson.

Cause is scientifically used to denote an antecedent stage in a routine (method of recurrence) of perceptions. There is no such thing as an arbitrary first cause. "No phenomenon or stage in a sequence has only one cause, all antecedent stages are successive causes, and, as science has no reason to infer a first cause, the succession of causes can be carried back to the limit of existing knowledge, and beyond that *ad infinitum* in the field of conceivable knowledge. When we scientifically state causes we are really describing the successive stages of a routine of experience."[28] Any so-called first cause, therefore, is only a limit, permanent or temporary, to knowledge. A certain sequence of events has occurred and recurred in the past so that a definite sequential order has been built up in our perceptions, and in this routine of perceptions lies the scientific meaning of causation. The likelihood that the same routine of events will occur again in the future is a matter of belief which is expressed in the concept and theory of probability. "Science in no case can demonstrate any inherent necessity in a sequence, nor prove with absolute certainty that it must be repeated. Science for the past is a description, for the future a belief; it is not, and never has been, an explanation, if by this word is meant that science shows the necessity of any sequence of perception."[29] Necessity belongs to the world of conceptions, not to that of perceptions. A theory involving the idea of necessity is a logical concept which arises from the definitions and axioms with which we start mentally. But logic and necessity "do not exist in the sequence of sense-impressions which we hope that they will, at any rate approximately, describe."[30] "Science cannot demonstrate that a cataclysm will not engulf the universe tomorrow, but it can prove that past experience, so far from providing a shred of evidence in favor of any such occurrence, does, even in the light of our ignorance of any necessity in the sequence of our perceptions, give an overwhelming probability against such a cataclysm. . . . Science is an intellectual *résumé* of past experience and a mental balancing of the probability of future experience. . . ." [31] Proof in the field of perceptions is the demonstration of overwhelming probability. Pearson insists that we should use the word *know* only of conceptions, and reserve the word *believe* for perceptions.[32] When there has been no breach of routine in the past sequences and the number of sequences observed is very great, the degree of probability has become so great as to be a practical certainty. Probable and provable become practically identical. The practical aspects of the concept of probability as treated statistically have been considered briefly, but sufficiently for our purposes, above, and will not be reconsidered here.

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[26] Jevons, *op. cit.*, p. 522.

[27] Consult the discussion of this subject by Pearson, *op. cit.*, Chap. IV. See also Jevons, *op. cit.*, Chaps. XIII-XVII and Westaway, *op. cit.*, Chap. XXIII. The following discussion follows in general that of Jevons and Pearson.

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[28] Pearson, *op. cit.*, p. 130. *Cf.* Frederick J. Teggart, *Theory of History* (Yale University Press, New Haven, 1925), Chap. VI, "The Concept of Cause in History-Writing." He says in part (p. 65): "What 'cause and effect' actually implies in history is the relation of 'before and after.' It follows necessarily that causation, as it appears to the historian, is not distinguishable from order in time."

[29] Pearson, *op. cit.*, p. 113. This same view was expressed by David Hume early in the 18th century. *Cf.* also Westaway, *op. cit.*, pp. 146-150. Westaway includes the theories of several outstanding philosophers as to the nature of cause and effect in his pp. 151-161. Spencer and J. S. Mill held substantially the same views as Pearson; so does A. S. Eddington in his recent book, *The Nature of the Physical World* (The Macmillan Co., New York, 1928), Chap. XIV. Eddington says (pp. 294-295): "It is a consequence of the advent of the quantum theory that *physics is no longer pledged to the scheme of deterministic law.* Determinism has dropped out altogether in the latest formulations of theoretical physics and it is at least open to doubt whether it will ever be brought back. . . . Meanwhile we may note that science thereby withdraws its moral opposition to free will. Those who maintain a deterministic theory of mental activity must do so as the outcome of their study of the mind itself and not with the idea that they are thereby making it more comformable with our experimental knowledge of the laws of inorganic nature. . . . How can I cause an event in the absolute future, if the future was predetermined before I was born?"

[30] Pearson, *op. cit.*, p. 134.

Generalization

Generalization is an instinctive process of simplification. When a characteristic is perceived in an object, it is extended to all other objects which resemble it. This process of viewing individual objects as particular cases of a more general proposition is one means of deepening our comprehension of things. By it we pass from a few facts which come under our immediate examination to a great number of unexamined facts on the assumption that they are subject to the same conditions. It enables us to increase our knowledge of particulars since such knowledge cannot be adequate until particulars are seen as parts of the general. It is the method by which predictions are made with varying degrees of probability. One of the chief functions of science is to enable us to predict and to act with confidence. Properly made generalizations increase the possibilities of fairly accurate anticipations.

Generalizations are dangerous if advertised as scientific conclusions, and are a source of many errors in research. Often they are an unconscious and poorly performed process of sampling and can be made correct only by being subjected to the same sound principles that underlie good sampling. Loose generalizations are the earmarks of the uncritical and untutored persons. They always have been the bane of science. To generalize accurately requires caution and long training, and even then the capacity appears to be confined to a relative few. Jevons put it well when he said: "Every mind must generalize, but there are the widest differences in the depth of the resemblances discovered and the care with which the discovery is verified. There seems to be an innate power of insight which a few men have possessed preeminently, and which enabled them, with no exemption indeed from labour or temporary error, to discover the one in the many. Minds of excessive acuteness may exist, which have yet only the powers of minute discrimination, and of storing up, in the treasure-house of memory, vast accumulations of words and incidents. But the power of discovery belongs to a more restricted class of minds." [33]

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[31] *Ibid.*, pp. 113-114.
[32] *Ibid.*, p. 150.

The use of analogy

Constructive reasoning or inference may lead to generalizations based upon the comparison between objects with common characteristics in a given class, or it may grow out of the application of the processes of analogy. When objects of different classes show the same or a similar relationship the comparison of relationships is made by analogy. Statesmen often are alluded to as pilots of states since their relation to their respective states is assumed to be the same as that of the ship's pilot to his ship. Quite often analogy provides the only means of describing certain notions by employing in the metaphorical sense the names of things resembling them. Analogy embraces every degree of resemblance including not only things of different classes but, through imperceptible gradations, merging into things of the same class. For this reason it is difficult at times to distinguish between reasoning by analogy and reasoning from comparison of objects within the same class. In this discussion we shall confine ourselves to the comparison of relationships of things in different classes in order to avoid confusion.

The bases used for analogy may be any common characteristic although not of sufficient importance to cause the objects to fall within the same scientific class. A melody is sweet, an oration is beautiful or brilliant, colors are harmonious. Analogy pervades most human thought. It is a guide to discovery. "Whenever a phenomenon is perceived, the first impulse of the mind is to connect it with the most nearly similar phenomenon."[34] Analogy is a most valuable instrument in the construction of correct hypotheses. It has been of great value in mathematics, mechanics, astronomy, and doubtless in every other field of science.

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[33] *Op. cit.*, p. 626.

While scientific men realize the superior powers which correct analogy affords them, they are also aware that incorrect analogies are easily advanced and often mislead. Reasoning by analogy carries with it its own pitfalls. Correct reasoning by analogy implies a careful scrutiny of the analogy by the scholar. False analogies lead to the conception of many things which, so far as science has been able to discover, do not exist. The use of analogy, both correct and incorrect, shows itself in our language; and in many cases the analogies implied in our words have served to prolong confusion in thought since actual facts do not support these analogies. It is the duty of the scholar, therefore, to subject to careful examination the use of all expressions embodying analogies lest they be found without support in fact.

Prediction

One of the valuable contributions of science or scientific method is its aid in prediction. As scientific knowledge advances the scientist is able to predict results with a closer approach to certainty. Fundamentally the most important proof of the soundness of knowledge is power to confer the ability to foresee. In the social sciences the power to predict has been marked largely by its failure, unless we admit prediction of an approximate character, which at the same time casts light upon the many weaknesses in the social sciences. Since many hypotheses of the social sciences have not been tested sufficiently to be classed as laws, it naturally follows that dogmatic prediction is unsafe. In no case can it be more than a probability and in no case can the prediction be exactly in accordance with all details. Even in the so-called exact sciences prediction deals only in terms of probabilities, although the degree of probability may be so great in some cases, as for example in astronomy, as to amount almost to certainty.[35]

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[34] Jevons, *op. cit.*, p. 629. On analogy consult also Westaway, *op. cit.*, Chap. XXII.

Prediction in the exact sciences sometimes is difficult but in the social sciences it often approaches the impossible unless very few variables are involved. Very often the difficulties are so great, and the problems involve so many variables, that few persons of scientific training care to risk their reputations with predictions which involve anything more than relatively simple problems. The chief service of the social sciences comes in furnishing us with classified experiences of the past which may be applied again with profit when new, unforeseen, or similar experiences occur in the future. But just what experiences await us cannot be known in detail or more than approximately unless under the artificial control of man, as, for example, when law prescribes what the future procedure shall be in certain instances. Science merely describes what has taken place in the past; it shows that certain sequences have occurred; but that these sequences will recur in the future is merely a question of *belief* or *probability*, not a question of *necessity*. Science recognizes no such law of necessity.

Systematizing and editing the data

After the proper classification, analysis, and generalization of the data comes the systematization. The material must be arranged according to the outline which should have been developed to the proper detail by the time this stage is reached. Proper systematization involves a checking and editing of the materials in order to make certain that they are relevant and from reliable sources. The critical scholar will endeavor to eliminate those observational data obtained under abnormal or unusual conditions which militate against their reliability. He looks for inaccuracies and inconsistencies which have crept in unnoticed. He attempts to determine whether the data are of sufficient quantity to provide the evidence called for in the problem. He searches for misstatements, exaggerations, unreasonable and ambiguous statements, and is constantly alert for any loopholes that may appear.

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[35] Eddington, *op. cit.*, pp. 220, 306-308, has pointed out that absolute certainty in prediction even in physics is impossible because of what he calls the *principle of indeterminacy*, which is that a particle may have position or it may have velocity but it cannot in any exact sense have both. ". . . If we strive after a more accurate specification of position a very remarkable thing happens; the greater accuracy can be attained, but it is compensated by a greater inaccuracy in the specification of the velocity. Similarly if the specification of the velocity is made more accurate the position becomes less determinate." This principle of indeterminacy, he insists, prevents accurate prediction.

For a different view with respect to the possibilities of prediction in the social sciences, see George A. Lundberg, *Social Research* (Longmans, Green and Co., New York, 1929), pp. 12-17.

All quantitative data collected in the various ways outlined in the preceding chapter should be tabulated, evaluated, interpreted, and edited according to proper statistical methods at the earliest opportunity, although the process often may be a continuous one throughout the various stages of the analysis of the data. Ordinarily when the replies on a schedule show inconsistencies the schedule should be discarded, the inconsistent parts omitted, or supplementary inquiries should be made to correct the deficiencies. Occasionally the editor finds enough confirmatory information in that or other schedules to justify corrections. Sometimes blanks on schedules may be filled in from the other material on the schedule or questionnaire. When important gaps appear he should endeavor to secure the necessary additional information. Whenever there are apparent errors he should verify the questioned data. The tabulation may be by hand or by mechanical methods.[36] In all statistical work accuracy is fundamental; therefore every care must be exercised in checking the tabulated data with the sources. In such work there is no room for the careless and incompetent worker. A single error may invalidate a most important and time-consuming piece of work. Such persons, when discovered, must be excluded from this type of work.

Synthetic operations

After the worker has classified, analyzed, systematized, and edited his data, he turns his attention to constructing his findings and classifications into an organized and logical whole, properly described, in order to make clear and permanent the net results of his work and to facilitate reference to the subject.

The mode of construction depends upon the nature of the materials he has at his disposal. From the documents the scholar is almost certain to secure a mixture of heterogeneous facts, even though properly classified and analyzed, which must be constructed into an ordered, systematic, and logical whole. In dealing with these facts it is of the utmost importance to the scholar to realize that he is interpreting them in the light of the present-day world in which he moves. In other words, he must be fully aware of the subjectivity involved in dealing with past events and must do all in his power to reduce its influence to a minimum. This is done by adhering to the bare facts accumulated as closely as possible. Every writer reconstructs, as he imagines them to have been, his accumulated facts regarding objects, living beings, actions, motives, and conceptions of men, but the writer must be fully awake to the fact that he imagines them as they seem to him *now* and not necessarily as they actually existed prior to his time. The awareness of the fact that fancy and imagination will creep in unless watched closely, will do much to eliminate them. To secure a thoroughly objective attitude toward the problem in hand and the facts accumulated must be uppermost in the mind of the research worker.

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[36] For a discussion of this and related subjects, see Robert E. Chaddock, *Principles and Methods of Statistics* (Houghton Mifflin Co., Boston and New York, 1925), Chap. XV. *Cf.* also Eigelberner, *op. cit.*, Chaps. XIII, XIV.

The constructive work is begun by imagining the facts which have been accumulated on the model of what is supposed to be the analogous facts of the present. Having thus imagined them, they are grouped according to schemes of classification devised on the model of a body of facts which have been observed directly, and which are supposed to be analogous to the body of past facts under consideration. The problem of grouping facts is solved with the completion of the outline, a question discussed elsewhere at sufficient length.

The point of view from which the author is to write must be established clearly at the outset and maintained consistently throughout. Ordinarily one may write from the individual point of view, from the social, or from an objective position which may combine the two. Once he has adopted his point of view, the scholar must exercise scrupulous care in adhering to it. If he adopts the third point of view he should not shift his position without a clear warning to the reader. An unannounced, and perhaps an unrecognized, shifting of position is altogether too common in works of serious pretense.

Closely akin to the point of view is the question of maintaining a proper perspective. Special subjects should be treated only as a part of a larger field. The proper perspective must never be lost. The specialist must always look beyond the confines of his own subject into the field of general events and place his specialized subject in the proper relation with the whole social organism. The facts under special consideration may have tremendous, little, or no effects upon larger fields of social activities. Little causes may have great effects and the specialist must give careful consideration to the relations of cause and effect. In a flood a branch of a tree may dam a current and transform the aspect of a valley. The significance of this caution regarding the maintenance of proper perspective is that the research involved in any scholarly work must go far beyond the confines of the subject under primary consideration. It will reach into all the fields into which the special subject does or may lead. The scholar must always be willing to do much research that does not show itself to the casual reader in the final production.

Another warning of a general nature should be considered carefully by the would-be scholar. In treating groups care should be taken to analyze their homogeneity. It is a common practice to credit all members of groups with characteristics, presumably common, while in fact the characteristics differ widely. It is difficult to exercise too much caution in studying the bonds which seem to unite different political, economic, or racial groups. Large groups will break up into smaller groups according to common bonds, and care must be taken not to credit all members of all groups with many presumably common characteristics. While these are problems that ordinarily are solved in the proper classification of facts, they also appear when the research worker attempts to construct his classified facts into a larger organized whole.

Determination of the collective import of acquired knowledge

Every scholar should attempt to determine the collective import of all facts secured and of the general conclusions which he thinks he has derived scientifically from the available data properly classified and properly interpreted. A scholar does not attempt to "gloss over" the weaknesses of his accumulated information; he makes notes of them and labels them in unmistakable terms. He seeks to keep clearly before his reader or audience a clear distinction of the value of the different types of information presented. He makes clear the nature of his sources of information either by clear implication or by specific statements. He recognizes that the value of his knowledge depends upon the value of his sources. He attempts to see clearly the value of his work as a whole, and endeavors to fit it into the general scheme of things. A piece of work without point represents wasted time and energy. To fit his work into the proper niche, the scholar should have a clear-cut idea of the fundamental principles underlying the activities in the general field in which he is working.

Desirability of condensation and precision in exposition

Before considering the technique of method in exposition, to which the next chapter is devoted, a few general warnings may be given to the worker with profit.

If the writers in the social sciences are to make their productions truly scientific they must use all the exactness, precision, and brevity possible in the presentation of their qualitative and quantitative data. The increased use of statistical method has done much to increase the appreciation of and to secure exactness in the use of quantitative data. It has been fruitful particularly in giving a better insight into the proper method of classifying mass data according to some common attribute; it has given the research worker a keener appreciation of the nature of the different kinds of averages, so elusive to many persons; it has emphasized the importance of the measurement and study of the deviations of individual objects and persons from the average or typical; it has instilled caution through study of the nature and measurement of probable error.

In the presentation of qualitative data many writers in the social science fields show very little appreciation of the necessity of the utmost exactness in explanation and description. In the exact sciences great exactness and precision are secured by the use of short formulæ which have secured general acceptance. Any one writing in those fields is compelled to use the formulæ, and the information conveyed through such media must mean the same to both writer and reader. The social sciences, however, have few exact and accepted formulæ at their command; consequently it behooves writers to exercise unusual care in the presentation of their data if error, inexactness, and misconceptions are to be avoided.[37]

Concepts must be expressed in terms that are brief and yet precise. There is always need for a compromise between the conflicting ideas of brevity and precision. Brevity alone results in vagueness; precision involves detail. To secure the proper balance between the two ideas, the writer must learn to omit all that is not necessary for the purpose of conveying his ideas, but at the same time not omit any word or statement necessary to convey to the reader the exact characteristics of his concepts. Sobriety and simplicity are virtues; adornment is dangerous. The use of qualifying words and phrases, comparatives and superlatives, adjectives and adverbs, should be avoided if possible, and when necessary, used with care.

Words must be used in a fixed and precise sense. If the word has different meanings, a clear definition should be given of the precise meaning of the word as used. Precise language is an indispensable instrument to the scientist. Concrete rather than abstract terms should be used whenever possible since their meaning is clear. Abstract terms appear impressive and scientific, but they are seductive and in them lie confusion of thought and perhaps merely verbal notions. A plea for simple, exact, incisive, and unadorned writing is not a plea for homely or unfinished writing. Simple, exact, and incisive writing may carry with it just as much true beauty and show as much polish and finish as writing which employs the more ornate devices. It may be compared with our most lasting music in which the melody or fugue is one of simplicity. One sees the difference when he compares Shubert's "Ave Maria" with modern jazz. It is seen also in the contrast between Lincoln's "Gettysburg Address" and the more ornate types of oratory so characteristic of most addresses. Indeed, simplicity often seems to indicate not alone clearness of concept but profundity both in mental insight and in emotion.

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[37] See also Lundberg, *op. cit.*, Chap. III, "Terminology, Units, and Classification."

The beauty in simple writing lies not only in the proper choice of words but in the clear portrayal of ideas and conceptions, the true function of language. The use of various artistic devices frequently results in vagueness and confusion of ideas. Too much care cannot be exercised by the scientifically trained writer in presenting the qualitative data which are particularly illusive. To escape the usual pitfalls he will observe not only the precautions just mentioned, but in addition will seek constantly to make clear the real as well as the conventional meaning of his terms.

In dealing qualitatively with persons, facts, and events there are a few simple warnings that always should be borne in mind. (1) The scholar should retain only those data which have influenced clearly the problem at hand. (2) In dealing with persons his assertions regarding them must not be based upon their assertions regarding themselves, nor should he expect always to find coherency or logical connection in their acts since real people are not always logical. (3) Facts should be grouped according to their consequences and when so combined as to produce a common result, one has in his possession what is commonly conceived of as an event. (4) Events should be described precisely according to their character and extent. To characterize properly an event it should be treated so as to distinguish it clearly from every other event, giving precisely its place, data, extension in time, and immediate causes and results.

Qualitative descriptions of persons, facts, and events give but vague and abstract ideas; quantitative treatment gives greater exactness if used properly. It is futile to attempt to lay down in a brief space the fundamental principles to be followed in dealing with quantitative data. These principles can be comprehended and appreciated only after a training in principles of statistics. A few warnings may be given with propriety at this point, however, which may be of some profit to those persons not trained in statistics.

There seems to be a general feeling among many who have never studied statistics that any average individual who uses care in his work can use statistics intelligently. Few things could be further from the truth; only those persons have such ideas who have no comprehension of the nature of that science. The reader should bear this simple warning in mind although he is certain to consider it a gross exaggeration. The untrained never should use statistical data without the advice of some competent statistician. Most research workers in the social sciences would profit by an acquaintance with statistical method since it is hardly an exaggeration to say that the time has arrived when it is a part, if not a necessary part, of the equipment of practically every research worker. There is a pronounced trend toward the use of quantitative data in an effort to secure more exact information as a basis for our generalizations, and the research worker of today cannot read the current literature in his field dealing with quantitative measurements unless he has grasped the fundamentals of statistical methods. Indeed, it is probably one of the very best specialized types of training available in the social sciences to give the beginner a comprehension of scientific method.

CHAPTER XII

THE PREPARATION OF THE MANUSCRIPT

Presenting the data

In presenting the data and the conclusions drawn therefrom, the researcher should keep in mind certain objectives: (1) He should choose his readers and address his work to their special interests. If the problem has a wide popular appeal, it should be presented in terms that are intelligible to the person of average intelligence. If, on the other hand, the subject is a highly specialized one, it will interest only a small group of trained experts and, therefore, it should be presented in an exhaustive and befittingly formal and technical manner. (2) He should present sufficient data to make his conclusions convincing, and to give his work an atmosphere of painstaking thoroughness. (3) In determining the form of presentation, due regard should be had for the character of the data. They may lend themselves to a purely textual treatment, or they may require a combination of textual matter with charts, graphs, tables, and areas, that is, the use of circles, squares, figures, or pictures for the purpose of making graphic comparisons.

A. THE PARTS OF THE MANUSCRIPT [1]

The title-page

The title-page should contain the title of the study, stated in the fewest words that will describe adequately the content of the manuscript. The title should be chosen judiciously with a view to arresting the reader's attention and interest, but it should not be bizarre or misleading. The title-page further should contain the name of the author, which may be followed by the abbreviations of scholastic degrees held by the author, titles which he holds or has held, the abbreviations of learned societies to which he belongs, and the titles of other books which he has written. This information is not given for the purpose of parading the accomplishments of the writer but for the benefit of the reader in determining whether the author may be regarded as an authority on the subject treated. If the list of degrees, titles, and so on, is long and the author is well known, it is better to leave the list out altogether as a concession to good taste. The verso of the title-page may be used for a list of the author's other works if these works are numerous.[2]

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[1] Some of the parts here listed may be wanting in any given book. A novel, for instance, ordinarily would not have an appendix, a glossary, a bibliography, or an index.

The dedication

The common practice of dedicating books to somebody is often in obvious poor taste and is of doubtful value even in its most unobjectionable form. As a dedication is an expression of a strictly personal obligation or relationship, its most acceptable form is that which conceals the identity of the dedicatee from all persons except those immediately interested. So used, the dedication is not especially objectionable, but neither does it serve its usual function of currying favor through a not too subtle bit of published flattery. If the dedication is motivated by ulterior considerations—if its aim is to win the support of or to parry possible criticism by some influential person—it is patently an offense against good taste; but granting the author's sincerity, is he not presuming, placing a high valuation upon his own work, when he assumes that the dedication of his book to some distinguished person is a coveted honor rather than an embarrassment? Dedications frequently are well-meaning but tactless blunders.

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[2] The title-page of a book contains additional matter, namely, the edition, the place of publication, the publisher's name, and the date of publication. On the reverse side of the title-page usually is printed the date of the copyright. A revised book ordinarily is recopyrighted. The date of the copyright should be distinguished from the date of printing; the former date will indicate whether the book is out of date. See pp. 333-351 below for a discussion of copyright. Revision should be distinguished from reprinting. The place of publication denotes the probable nationality of the author, a fact that may affect the value of the book for any given purpose. Thus, a work on industrial combinations published in Spain probably would not be very useful to a study of the trust problem in the United States. The name of the publisher may throw some light on the trustworthiness of the text. The presentation of a book by a reputable publisher usually gives assurance that the work has merit and that the text is reasonably free from error.

Mr. Ronald B. McKerrow makes the following distinction between "edition," "impression," and "issue": "In modern times we can define 'edition' as the whole number of copies of a book printed at any time or times from one setting-up of type (including copies printed from the stereotype or electrotype plates made from that setting-up of type), and an 'impression' as the whole number of copies printed at one time, i.e. in ordinary circumstances the total number of copies printed without removing the type of plates from the press. By 'issue' is generally meant some special form of the book in which, for the most part, the original printed sheets are used but which differs from the earlier or normal form by the addition of new matter or by some difference in arrangement. . . . The general principle is that when we talk of a new 'edition' of a book we mean that the type of the whole book, or at any rate of the text as distinguished from the preliminary matter, has been set up afresh; while when we speak of a new issue, we mean that what were left of the old sheets of the text have been bound up with a new title-page or with new preliminary matter. . . . My own feeling is that when we are dealing with books essentially the same in contents, 'issue' implies the total number of copies put out *at one time*, and that the simultaneous publication of a book by a variety of people does not constitute separate issues; . . . ." *An Introduction to Bibliography* (Oxford University Press, Oxford, England, 1927), pp. 175, 176.

Sometimes a book is dedicated to some person (such as a mother, father, or daughter) who may have no knowledge of or interest in the subject treated. It is natural to wish to share one's accomplishments and successes with those one loves, but obviously the dedication of a work on higher mathematics to an infant son has no rational basis, and the reading public is likely to regard it as a gratuitous indulgence on the part of the author.

The preface

In the preface the author states the object of the work, gives suggestions as to its use, explains and possibly justifies the method of presentation employed in the treatise, if this varies from the generally accepted methods or forms, and makes acknowledgments for assistance in its preparation. Acknowledgments should be made only to those who have given real service; names should not be listed for the sole or primary purpose of enhancing the value of the work by giving it a fictitious authority.

The preface deals with the history, scope, and purpose of the manuscript or book. It defines the work and indicates the author's opinion of the place of his study in the field of knowledge, if an introduction is not given. Publishers commonly base their notices upon the preface; the library cataloger and bibliographer depend upon it for a description of the scope and method of the work; prospective purchasers use it as a test of value; and, unfortunately, many reviewers base their reviews upon it. It is common to have a preface, numbered and signed, for each edition of the book. The place and date usually follow the name of the author and are placed on the left side of the page.

The table of contents

The table of contents may contain only a list of the titles of the chapters, followed by the page number on which each chapter begins; or the table of contents may be analytical, containing, besides the chapter headings, subheads or section-headings or words or phrases indicating the subject matter of the chapters. Subtitles should be indented under each chapter title, if followed by page or section references, which is highly desirable; but if page or section references are not given, the subtitles may be run in together and separated by semicolons or dashes.

List of illustrations, forms, diagrams, maps

If the manuscript is illustrated, a list should be made giving the titles or numbers of the illustrations and page numbers where they may be found. Forms or diagrams should be listed in the same manner as pictorial illustrations. Short titles, if not misleading, may be used in the list if the legends under the illustrations are long.

The introduction

The introduction may contain (1) a statement of the nature and importance of the problem discussed; (2) a reference to existing works in the field, distinguishing these from the work following; and (3) a brief description of the materials and methods used in the investigation. The introduction treats of the subject matter of the manuscript or book; it is most commonly used for translations or for editions printed after the author's death. The introduction is sometimes written by some person other than the author of the manuscript or book. This second person is commonly some accepted authority in the field covered by the work, and the introduction is essentially an appraisal of the problem and sometimes an evaluation of that work. It is of doubtful good taste for the writer of the introduction to evaluate the work in the sense of praising it if the author is living. Such appraisal appears to be a form of advertising and forestalling of criticism.

The text

Each chapter should begin on a new page. The chapter number should precede the title of the chapter and both, obviously, precede the reading matter. If a chapter is very long it may be desirable to break it up into two or more chapters, repeating the original heading for each of such chapters and adding the word *continued* (preferably set in italics). A synopsis or outline or bibliography may precede each chapter, set in smaller type than the text, although this practice is uncommon.

The appendix

An appendix is used for additional or supplementary matter, such as statistical tables and forms, documents, and explanatory notes to the text. This material, though useful and pertinent, does not properly belong in the text. An appendix should not be included if it can be avoided.

The glossary

Certain types of manuscripts or books require a glossary for the purpose of defining obsolete or rarely used words or words of a highly technical character.

The bibliography[3]

A manuscript representing extensive research should contain a bibliography, unless the footnotes are complete, in which case a bibliography is a duplication and publishers sometimes object to the expense. In other cases the bibliography may be so comprehensive as to make inclusion inadvisable. It may be required, however, for certain types of work, such as doctoral dissertations. Bibliographical materials may be classified as follows: (1) *Books,* (2) *Periodicals,* and perhaps (3) *Miscellaneous.* A more satisfactory division would be: (1) *Books,* (2) *Periodicals,* (3) *Documents, Manuscripts, Letters, etc.,* (4) *Cases.* The classification adopted depends largely upon the character of the materials and the nature of the subject. Under each head the books, newspapers, articles, and so on, should be arranged alphabetically by authors, or by titles if the work is anonymous or merely edited. It is a good rule to avoid abbreviations in the formal bibliography, except for volume number, section, page, and so on. Although forms vary somewhat, the following generally obtain for the bibliography.

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[3] *Cf.* McKerrow, *op. cit.*

Books

Clark, John Maurice. *Social Control of Business.* The University of Chicago Press. Chicago. 1926.

Merriam, C. E. and Barnes, H. E. (Eds.) *A History of Political Theories—Recent Times.* The Macmillan Company. New York. 1924.

Periodicals

Miller, A. C. "Federal Reserve Policy." *The American Economic Review.* June, 1921. Vol. XI, No. 2.

"Democracy in Banking." *Nation.* September 18, 1920. Vol. CXI, No. 2881.

Documents

Johnson, Joseph F. *The Canadian Banking System.* United States National Monetary Commission Publications. 61st Congress 2d Session. Senate Document No. 583 (1911).

The date here is in parentheses to prevent confusing it with the number of the Senate document. If the documents are well known and the abbreviations readily understood, it is good form to abbreviate long citations like the preceding one, although it is always proper and much safer to make them complete. The above would be abbreviated as follows:

Johnson, Joseph F. *The Canadian Banking System.* U. S. Nat. Mon. Com. Pubs. 61st Cong., 2d Sess. Sen. Doc. No. 583 (1911).

If the title does not comprise the entire document, the form would be (if abbreviated):

Johnson, Joseph F. "The Canadian Banking System." U. S. Nat. Mon. Com. Pubs. 61st Cong., 2d Sess. *Sen. Doc. No. 583* (1911).

Cases

Duplex Printing Press Company v. Deering, 254 United States 443 (1921).

Federal Trade Commission v. American Tobacco Company, 44 Supreme Court Reporter 336 (1924).

Daniel Ball, The, 10 Wallace 557 (1871).

Debs, In re, 158 United States 564 (1895).

Jackson, Ex parte, 96 United States 727 (1878).

When doubt arises as to what should be underlined (and thus thrown into italics when printed), only one question need be considered: What *contains* the subject? Is it a book, a magazine, or a document? If the subject comprises the complete book or document, the subject, which is the book or document, is underlined. If the subject is but one of many in a book, magazine, or document, the subject is placed in quotations and the book, magazine, or document is underlined. In other words, that which one must draw out of the library to secure possession of the subject is underlined. An exception should be noted: it is the title of the case, and not the name of the court report where the case is reported, that is set in italics. The reader is referred to pages 291-293 below for a discussion of the citing of legal literature.

The index[4]

A technical manuscript, or one intended as a work of reference, should have an index. If an analytical table of contents or an abstract is used, the index is less necessary but always desirable as it makes the work more usable. The index gives alphabetically-arranged detailed reference to all important matters discussed in the work, such as names of persons and places, events, titles of books, definitions, and vital statements. It should consist of main entries or headings, subentries, and cross references. In works composed of more than one volume the index is placed at the end of the last volume. Important classics, such as the Bible, have a special kind of index known as a "concordance," that is, an index to the *words* of the book, as distinguished from an ordinary index which lists *subjects*.

The index should be made by the author, if he has the necessary technical experience or training, since he is most familiar with the contents of the work. If, however, he lacks the knack of quickly grasping ideas and of condensing them into expressive words and short phrases, he should engage the services of some qualified person or have the publisher prepare the index.

There is difference of opinion as to the mechanical method of compiling the index. Some authors prefer big sheets of paper, some a thumb-indexed notebook, and others small cards or slips of paper. If the two first-named methods are used the main entry word is written just once, at the top of the sheet; if small slips are used the entry word must be written on every slip. On the other hand, it is exceedingly difficult to so gauge the space on large sheets that the subentries will be entered alphabetically, and it will be necessary, therefore, to do much cutting and pasting, or to recopy. If cards or slips are used it is a simple matter to keep the notes in alphabetical order, and, when editing them, to cancel the entry words on all but the first card or to replace them by some repeat sign such as a dash. When this is done the copy is ready for the typist and then the printer.

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[4] See George Edward Brown, *Indexing* (Grafton, London, 1921); Martha Thorne Wheeler, *Indexing; Principles, Rules, and Examples* (New York State Library School, Albany, New York, 1923), 3d ed.; William Dana Orcutt, *The Desk Reference Book* (Frederick A. Stokes Company, New York, 1926), pp. 160-193.

It is suggested that the worker supply himself with small pasteboard boxes, a little larger than his slips, labelling each with a letter of the alphabet, except that he may combine certain letters such as O and Q, U and V, and X Y Z. Entries for the index should be made when reading page proof, by underscoring (on an extra set of proof which the publisher should furnish the author) the words that are to go into the index, indicating whether the entry is a main entry or a subentry. These entries may be transferred immediately to slips and deposited in the proper pasteboard box according to the main entries, or they may be copied out later. The alphabetical arrangement of the subentries should be postponed until all have been made.

Entry words should not be capitalized, except proper names and book titles. The page or section numbers, where reference is made in the text to the item entered, should follow immediately after the entry as this is more convenient than having them tabulated at the right-hand margin. Different type may be used to denote emphasis; for instance, bold-face type may be used for main entries and for the most important page or section numbers, or italics may be used for subentries, but this is not recommended as italics are difficult to read.

There are three commonly used ways of arranging the index. (1) The main entries may be given hanging indention, projected to the margin one or two ems beyond the subentries. Each main entry is given just once and each subentry is put on a separate line. This arrangement is the most convenient, but it may not be practical if the index is very extensive, as it uses much space. (2) The arrangement may be similar to (1) except that repeat signs, such as dashes or "dittos," are used in the hanging margin to indicate that the main entry is repeated. (3) The form may be condensed by having the subentries follow directly on the main entries without dropping a line or indenting. This type of index is the least usable, but it is the only practical one for very extensive entries.

B. FOOTNOTES

The use of footnotes

Footnotes should not be used merely to display the author's erudition. Footnotes have several legitimate uses. (1) They may contain additional information bearing upon subject matter treated in the text, but which does not seem to fit into the body of the text. (2) Since they indicate sources of information for the materials in the text they furnish bibliographical aid to the reader. (3) By indicating the authorities upon which the work is based, they make it possible for the reader to judge the reliability of the work. (4) They call attention to additional supporting sources, or perhaps to contradictory statements in the text. (5) They may be used for cross references, to connect or relate the different parts of the text. Avoid the "footnote habit," the habit of putting matter in the footnotes that properly belongs in the text. Footnotes should consist chiefly of references to the literature of the subject under discussion.

Each important statement of fact in the text should have a footnote indicating the source of the information, unless it is of common knowledge or unless it is primary with the writer. Some not too modest persons regard themselves as the final authorities, and so do not document their writings; but even recognized authorities are not licensed to appropriate the ideas and labors of others without appropriate acknowledgment of such indebtedness.[5]

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[5] The reader is referred to Chapter XIV for a discussion on plagiarism.

The reference indexes to footnotes

If the matter in a paragraph is derived from one or more sources, it is permissible to use one footnote for the entire paragraph. If the manuscript is divided into chapters or parts, it is suggested that the footnotes be numbered consecutively through each chapter or part, beginning with 1; if the manuscript is not so divided, the footnotes may be numbered consecutively throughout; or, the numbering of footnotes may be continuous on the page only, but this procedure invites errors and so increases the expense for corrections in making page proof from the galley proof. Footnotes should be set in smaller type than the text.[6] They should be given plain paragraph indention, and the reference figure or index should be set superior to and immediately preceding the first letter.

For footnotes to the text use superior figures ($^{1,\ 2,\ 3}$) as reference marks or indexes, placed inside the punctuation mark, if any, when the mark refers only to part of the sentence and outside the punctuation mark if the reference is to the whole sentence. For reference marks in a table use superior lower case letters ($^{a,\ b,\ c}$) in italics. In statistical or mathematical matter, where the use of figures or letters for reference marks would be confusing, the following symbols are used in the sequence indicated: asterisk or star (*), dagger (†), double dagger (‡), section mark (§), parallels (||), and paragraph mark (¶). If more symbols are needed, double the above in the same sequence.

The reference mark in the text should be placed at the end of a quoted excerpt, not after the colon or other stop mark preceding the quoted matter; or immediately after the title of a book, case, statute, and so on, referred to but not immediately quoted, and also after each direct quotation if separated from the title of the work from which it is taken. If an author is referred to by name, but not directly quoted, the reference mark should be placed directly after the author's name, unless the name is in the possessive form (Blackstone's theory[1]) or reference is made to two or more works of the author.

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[6] The following make good type combinations: 9 point footnotes for 12 point text; 8 point footnotes for 11 and 10 point text; and 6 point footnotes for 9 and 8 point text.

In tables the reference mark should be placed at the right in reading and date columns, that is, immediately after the word or matter to which it relates, and at the left in figure columns, that is, immediately before the matter to which it relates. If a reference mark is not accompanied by words or figures, but stands alone in a date or figure column, it should be set in parentheses and centered. The reference marks should be in alphabetical order, beginning with the heading of the table, then going across from left to right, line by line from the beginning to the end of the table. The footnotes should be written at the bottom of the table and not at the foot of the page. If, however, the table covers several pages, the footnotes pertaining to each page should be written at the bottom of each page, except that notes from reference marks in the heading or box heads should be given only once.

The parts of the footnote

The first footnote citation of any work, in each chapter, should give the full name of the author, the full title of the work, the name of the publisher, and the place and date of publication. The footnote is a continuation of the text and, therefore, should be informal, as distinguished from the more formal and alphabetical form of the bibliographical references. No particular forms can be said to be exclusively correct, but the models following are recommended as sanctioned by good usage.[7] Four considerations have controlled in the adoption of these forms—logic, completeness, consistency, and, to some extent, custom. Whatever forms the writer adopts must be followed consistently.[8]

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[7] A study of usage revealed that there is little consistency in practice, and very few indications were found which showed that writers endeavored to maintain consistency as between their citations of books and of periodicals. This is true even of style books. Lack of consistency and logic invite confusion. It will be noticed in the forms used here that a consistent system exists not only as between books and periodicals in the footnotes but also as between books and periodicals in the bibliography; and also that there is the closest relationship between the form of the bibliography and that of the footnotes, the latter being merely the bibliographic form arranged in informal order. This, of course, is the logical distinction between the bibliography and the footnotes. The four sets of forms involved in this related system of reference are complete, consistent, logical, and supported by the highest percentage of usage.

[8] The various illustrations of the use of footnotes to which the superior letters in the text immediately following refer, are grouped together on p. 290 below.

The parts of the footnote are:

(1) *The name of the author.* The Christian or given name or initials should be written before the surname.[a] In subsequent footnotes the surname alone may be used if no misunderstanding could result, that is, if no other author with the same surname is referred to in the work.[d] If the full name of the author is given in the text it should be omitted from the footnote.[e]

(2) *The title of the work cited.* In the first reference to the work in each chapter the full title, as it appears on the title-page, should be given,[a] unless it appears in an appended formal bibliography, in which case an abbreviated title sufficient to identify clearly the work is all that is required. After its first occurrence the title may be abbreviated either by ellipsis, or by word abbreviation, or both.[h] Published titles (of books, documents, and periodicals) should be in italics[a, g]; titles of articles and of parts of publications should be Roman enclosed in quotes.[g]

(3) *The facts of publication.* The facts of publication may be given in full[b] or in briefer form,[c] preferably in full. When a book is cited the facts of publication should be noted (and punctuated as indicated in the forms below) in the following order: immediately following the title, and in parentheses, the name of the publisher, the place of publication, the date, and, outside the parentheses, the edition if more than one.[b] For a periodical or serial citation the date (month, day, and year), if given, should be set in parentheses and followed by the volume number and the pages.[g] The facts of publication are omitted after the initial citation if an abbreviated form of citation is adopted.[d]

(4) *Volume and page references.* While good usage sanctions the omission of the abbreviations *Vol.* and *p.* in the footnote, these must be used when confusion would otherwise arise,[a] and the abbreviation *P.* is used when only the page reference is given.[m] To secure uniformity, therefore, it is suggested that the above abbreviated forms be used consistently.[a] Footnote references should adopt the forms employed in the texts cited. Thus, Volume, Book, Part, Division, and Chapter should be capitalized and capital Roman numerals should be used with them[a] (except in references to ancient classical works, when lower-case Roman numerals are commonly used[n]); for pages of introductory mat-

ter (Preface, Introduction, Contents, and so on) use lower-case Roman numerals [f]; and for the text, Appendix and Index pages use Arabic numerals.[a]

Special forms, abbreviations, and symbols used in footnotes

If footnote references to the same work follow each other uninterruptedly on the same page, or from a verso or reverso (left-hand) to a recto (right-hand, ordinarily the odd-numbered) page, do not repeat the title but use the form *ibid.* (*ibidem,* that is, the same) followed by the volume, chapter, or page reference if different from the footnote immediately preceding.[k] *Idem* (the same) may be used in the place of *ibid.* if the second reference follows immediately upon the first and on the same page. Do not use *ibid.* for the first footnote on a verso page; either use a short title,[d] or the author's name with *op. cit.*[l] (*opere citato*, that is, in the work cited). After the first citation of a work in full, use the surname of the author with *op. cit.* for all subsequent references (except when *ibid.* may be used as noted above); do not use the author's given name or initials in second references unless two or more persons with the same surname are cited.[l] As the words *op. cit.* refer to the work of the author, whether this be a book, a part of a book, or an article in a periodical, do not use this form for references to titles of periodicals; but use it with the name of the author when given, for a second reference to an article found in a periodical or collection,[l] as it is the article and not the periodical that is the work of the author. When mention is made a second time of an *unsigned* article found in some periodical, or in a collection containing matter by several *unknown* authors, use *loc. cit.*[i] (*loco citato*, that is, in the place cited). When reference is made to material scattered through a book, *passim* (scattered about, or, here and there) is written after the title.[c] If it is desired to call attention to some other work for purposes of comparison, *Cf.* (confer or compare) is written before the reference.[f] The letter *f.* (*ff.* plural) written after a numeral denoting page references indicates *and the following page.*[b]

Other abbreviations that may be employed in footnotes, but not in the text, except in technical works, are:

et seq., for *et sequentes,* or, the matter following
seq. or *sq.*, for *sequente,* or, in what follows
seqq. or *sqq.*, for *sequentibus,* or, in the following (places)
viz., for *videlicit,* or, namely or to wit
e.g., for *exempli gratia,* or, by way of example
i.e., for *id est,* or, that is
ubi sup., for *ubi supra,* or, where above mentioned
q.v., for *quod vide,* or, which see
col., for column
ex., for example
fig., (plural, figs.), for figure
N.B., for *nota bene,* or, note well
cl., for clause
n., for note
par., or ¶, for paragraph
sec., or §, for section
l. (plural, ll.) for line
sc., for *scilicet,* or, namely
Pub. Doc., for public document
ed., for edition
Cong., for Congress
Jour., for Journal
Stat., for statute or statutes
Tr., for translator
Ser., for series
Rep., for report
No., for number
Art., for article
J., for Justice (Day)
C.J., for Chief Justice (Taft)
Ch., for Chancellor (Kent)
C., for Commissioner (Davis)
MS (plural, MSS), for *manuscriptum,* or, manuscript
et al., for *et alibi,* or, and elsewhere; or, *et alii,* or, and others
etc., for *et cetera,* or, and the others, or, and so forth
ante, for before, and used to refer to matter preceding in the same book but in a separate chapter
post, or, after
supra, or, above
infra, or, below
ult., for *ultimo,* last (of the last month)
prox., for *proximo,* next (of the next month)
inst., for *instante,* present (of the current month)

[a] Bruce Wyman, *The Special Law Governing Public Service Corporations and All Others Engaged in Public Employment* (Baker Voorhis and Co., New York, 1911), Vol. I, Bk. II, Pt. III, Chap. X, § 331, p. 284.

[b] F. N. Judson, *The Law of Interstate Commerce and Its Federal Regulation* (T. H. Flood and Co., Chicago, 1916), 3d ed., pp. 30 *f.*

[c] Frederick N. Judson, *The Law of Interstate Commerce and Its Federal Regulation* (Chicago, 1916), 3d ed., *passim.*

[d] Judson, *Interstate Commerce,* p. 36.

[e] *Interstate Commerce,* p. 100.

[f] *Cf.* John M. Clark, *Social Control of Business* (The University of Chicago Press, Chicago, 1926), pp. xiii, xiv.

[g] Charles E. Merriam, "The Significance of Psychology for the Study of Politics," *The American Political Science Review* (August, 1924), Vol. XVIII, pp. 468-489.

[h] Merriam, "The Significance of Psychology . . .," *Amer. Pol. Sci. Rev.* (August, 1924), Vol. XVIII, p. 470.

[i] "Democracy in Banking," *Nation* (September 18, 1920), Vol. CXI, No. 2881. (First footnote citation.)

"Democracy in Banking," *loc. cit.* (Subsequent citations.) Or, *Loc. cit.* (If title of the article is given in the text.)

[j] Wyman, *Public Service Corporations,* I, 250.

[k] *Ibid.,* Vol. II, p. 840.

[l] Wyman, *op. cit.,* Vol. II, p. 840.

Merriam, *op. cit.*

[m] P. 90. Pp. 103-110.

[n] *Cicero De legibus* ii. 4. (Reference is to Book II, paragraph 4.)

Special forms for scientific works

For forms generally accepted by scientific societies see styles used by the *Botanical Gazette* and the *Astrophysical Journal.*

How to cite legal literature

There is no fixed form for the citation of legal literature. Some examples of customary forms will be given below, but for more comprehensive lists the investigator should consult some standard guide, such as Hicks, *Legal Research*, or *Law Books and Their Use*, or Cooley, *Brief Making and the Use of Law Books.*[9]

The very large number of citations required for the proper documentation of legal literature makes necessary an extensive use of abbreviations. These abbreviations have become well standardized, and they should therefore be used by anyone preparing a manuscript falling within the legal classification.

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[9] See p. 180.

In the forms given hereafter note that the author's given name is omitted and that the number of the volume precedes the name of the author.[a] Do not abbreviate the term *United States* when it appears in the title of the case.[b] In most law books the titles of books and of cases are not italicized in either the text or in the footnotes, but italics are used in a respectable number of legal publications. The usual practice is justified on the ground that as legal writings cite a large number of authorities the use of italics complicates the type-setting, results in poor typography, and confuses the reader. Italics are used in the examples given below. Note that, when italics are used, it is the title of the case and not the title of the law report that is set in italics. This is an accepted exception to the general rule stated elsewhere in this chapter.

Cite official reports before unofficial reports; primary before secondary authorities; and cite cases in the following order: (1) federal decisions, in the order of the ranking of the courts; (2) State decisions, listing the States in alphabetical order; and (3) English decisions. Within each group the cases should be arranged by date, beginning with the earliest decision. When listing cases they should be arranged alphabetically; the above arangement applies only to the citation of cases in the text or footnotes. When citing a case decided by the United States Supreme Court it is preferable to give not only the official report (U. S.) but, when possible, the Supreme Court Reporter (Sup. Ct.) and the annotated Lawyers' Edition (L. Ed.).[b] If the decision cited is by a lower federal court, indicate the court in parentheses.[c] If a State case is cited by the name of the court reporter, give the name of the State[d]; and if the case is reported in the Federal Reporter and annotated, give these reports in addition to the official State report.[e]

Treatises, Textbooks, Compilations

[a] 2 Wharton, *Criminal Law* (1912), 11th ed., § 1011.

Hutchinson, *Law of Carriers* (1906), 3d ed. by Matthews and Dickinson, Vol. I, § 7.

29 *Cyc.*, 543.

Law Reports

[b] *United States v. American Linseed Co.*, 262 U. S. 371, 43 Sup. Ct. 607, 67 L. Ed. 1035 (1923).

[c] *In re Hardy,* 229 Fed. 825 (D. C. 1916).

United States v. McCabe, 122 Fed. 653 (C. C. 1903).

Olmstead v. United States, 19 F. (2d) 842 (C. C. A. 1927).

[d] *Talbot v. Hudson,* 16 Gray (Mass.) 417 (1860).

[e] *Young v. Anderson,* 33 Idaho 522, 196 Pac. 193 (1921), 50 A. L. R. 1056 (1927).

Statutes

36 *Stat.*, 1094 (1911), 28 *U. S. C.*, § 71 (1926).

Rev. Stat. 1913 (Civ. Code), p. 1234.

N. Y. Laws 1926, c. 622, § 1.

Legal Periodicals

Thompson, "Abuses of Corporation Privileges" (1892), 26 *Amer. L. Rev.* 169.

23 *Case & Comment* (June, 1916), 44.

Government Documents

H. Rept. No. 2119, 59th Cong. 1st Sess., Ser. No. 4906. (For House Report No. 2119.)

S. Rept. No. 3922. (For Senate Report No. 3922. The number of the Congress and the number of the session is left out of this and the following forms but should be included in all citations.)

H. Doc. No. 127. (For House Document No. 127.)

S. Doc. No. 90. (For Senate Document No. 90.)

H. R. 416. (For House Bill 416.)

S. 120. (For Senate Bill 120.)

H. Res. 10. (For House Resolution 10.)

H. Con. Res. 20. (For House Concurrent Resolution 20.)

H. J. Res. 9. (For House Joint Resolution 9.)

S. Res. 11. (For Senate Resolution 11.)

S. Con. Res. 2. (For Senate Concurrent Resolution 2.)

S. J. Res. 3. (For Senate Joint Resolution 3.)

Ex. Doc. No. 100. (For Executive Document No. 100.)

Misc. Doc. No. 7. (For Miscellaneous Document No. 7.)

41 *Cong. Rec.* (1907), 1251.

When legal literature is cited in a social science work other than legal, the forms used for the legal works should conform to the other forms of the manuscript, except that it is the title of the case, never the name of the report, that is set in italics.

C. COPY-EDITING[10]

The writer should prepare his manuscript with scrupulous care before it is turned in to the printer. Careful editing will save time in printing and considerable expense for corrections. The proper preparation of a manuscript involves a thorough knowledge of the principles and mechanics of writing and of book-making. Largely it is a matter of maintaining consistency in style and form throughout the manuscript. The writer should give thought to the following matter.

The grammatical element

The manuscript should be checked for faulty grammatical constructions, tautological expressions, and the improper use of words. Foreign words and expressions should be verified. The punctuation, capitalization, abbreviations, compounding, and the use of italics, quotations, and so on, should be proper and consistent. The author should have a definite understanding with his publisher in regard to the form of the manuscript and this should be strictly adhered to. Some houses insist upon a certain form for the reason that many authors are not acquainted with the technique of good form and require guidance. If a writer is an expert in such matters few houses will attempt to change his form.

Indention[11]

There are several forms of indention used in typography. *Regular indention,* of which this paragraph indention is an example, is commonly used for each paragraph in prose manuscript. *Irregular indention* is used in certain styles of poetry and in display work.[a] Reverse or *hanging indention* makes the first line of full length and indents the following line or lines. It is used in poetry and occasionally in prose, as for each heading and entry of the index to a book.[b] *En echelon indention* is a diagonal arrangement of words and is used in advertisements and posters.[c] *Half-diamond indention* is frequently used for title-pages and consists in a symmetrical right and left indention.[d] *Lozenge in-*

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[10] See Arnold Levitas, *Editorial English* (Roy Press, New York, 1924), pp. 202-216.

[11] See Orcutt, *op. cit.*, pp. 55-56.

dention is indicated in the example given below.[e] *Blocked indention* requires all lines to be of equal length.[f]

[a] Hark! 'tis the rushing of a wind that
sweeps
Earth and the ocean. See! the
lightnings yawn
Deluging Heaven with fire, and the
lashed deeps
Glitter and boil beneath; it rages
on,
One mighty stream, whirlwind and
waves upthrown,
Lightning and hail, and darkness ed-
dying by.
There is a pause—the sea-birds,
that were gone
Into their caves to shriek, came forth,
to spy
What calm has fallen on earth, what
light is in the sky.—*Shelley.*

[b] The golden dreamboat's ready, all her silken sails
are spread,
And the breeze is gently blowing to the fairy port
of Bed.—*Guest.*

[c] Books
Paintings
Prints

[d] An Introduction to the Study
of the Political and
Social Sciences

[e] The writer should
prepare his manuscript
with scrupulous care before
sending to the printer
for publication

[f] This is an example of
blocked indention. All
lines are of equal length.

Paragraphing

The purpose of indention and of paragraphing is twofold: to improve the appearance of the page, and to indicate to the reader a change in the direction of thought. The paragraph is the unit of writing. It should represent a thought unit, that is, it should be a group of related sentences developing a central theme or topic, in the same sense that a composition is a group of related paragraphs developing a major theme.

Proper paragraphing is an indispensable aid to the reader. The break between paragraphs is a resting place for the mind of the reader, affording an opportunity for a summing up and for relaxation.

There is no standard length for a paragraph. The length should be determined by the number of words necessary to develop adequately the theme it contains. If, however, more than three hundred words are required for such a thought unit, the passage may be broken into two paragraphs for the reader's convenience. The writer should strive for proportion: each topic considered in a separate paragraph should deserve such prominence; and the relative length of the several paragraphs should be determined by the relative importance of the topics therein considered. A reasonable variety in the length of paragraphs, if logical, is to be preferred. Avoid the choppy effect of a succession of short paragraphs.

The use of side-headings

The mechanics of the book should be carefully worked out. A book whose materials are properly classified under appropriate headings and subheadings effectively set up, is much more readable, and hence more salable, than one that is carelessly or unintelligently run together. There are many mechanical aids that may be employed for the guidance of the reader. The chapter may be outlined through the use of side-headings or side-notes, of which there are several kinds. These side-headings may be set in light-face italics, full caps, or bold-face lower-case type. They may be enclosed in a box[a] or three-quarter box[b]; set flush with the type or run slightly into the margin[c]; they may be set off merely with white or blank space, leaving out the lines of the box[d]; they may be set wholly within the outer margin[e]; they may be run in with the text, with regular indention[f] or with no indention[g]; or, they may be set superior to and flush with the text.[h] The first three of these forms are now practically obsolete.

The legal trust

[a] The weaknesses of the pool led to the practical application to corporations of the principle of the legal trust, the typical legal form of which occurs when some person deeds or wills property to a trustee for the benefit of a third party. Under this arrangement the trustee becomes the legal owner of the property, but the beneficiary enjoys the income from it. As applied to corporations the stockholders

The legal trust

[b] The weaknesses of the pool led to the practical application to corporations of the principle of the legal trust, the typical legal form of which occurs when some person deeds or wills property to a trustee for the benefit of a third party. Under this arrangement the trustee becomes the legal owner of the property, but the beneficiary enjoys the income from it. As applied to corporations the stockholders surrender

The legal trust

[c] The weaknesses of the pool led to the practical application to corporations of the principle of the legal trust, the typical legal form of which occurs when some person deeds or wills property to a trustee for the benefit of a third party. Under this arrangement the trustee becomes the legal owner of the property, but the beneficiary enjoys the income from

The legal trust

[d] The weaknesses of the pool led to the practical application to corporations of the principle of the legal trust, the typical legal form of which occurs when some person deeds or wills property to a trustee for the benefit of a third party. Under this arrangement the trustee becomes the legal owner of the property, but the beneficiary enjoys the income from it. As applied

he
gal
rust

[e] The weaknesses of the pool led to the practical application to corporations of the principle of the legal trust, the typical legal form of which occurs when some person deeds or wills property to a trustee for the benefit of a third party. Under this arrangement the

[f] *The legal trust.*—The weaknesses of the pool led to the practical application to corporations of the principle of the legal trust, the typical legal form of which occurs when some person deeds or wills

[g] *The legal trust.*—The weaknesses of the pool led to the practical application to corporations of the principle of the legal trust, the typical legal form of which occurs when some person deeds or wills

[h] *The legal trust*

The weaknesses of the pool led to the practical application to corporations of the principle of the legal trust, the typical legal form

The use of centered headings

If the subdivisions represented by the side-headings discussed above can be grouped logically under a number of related titles, such titles should appear as centered headings or captions. To indicate their subordination to the chapter title, centered headings should be set in small capitals, or in italics with the initial letter of all important words capitalized. By the same rule of subordination (when centered headings are used) the side-headings should be set in lower-case italics or lower-case bold-face type with only the initial word kept up.

The use of different type

If different type is to be used in setting up the manuscript, the following rules should be observed:

Draw one line vertically to the left of the matter if it is to be set in type one size smaller, and use two lines to indicate type two sizes smaller than the regular matter.

A single line drawn under a word or words indicates *italics.*

Two lines indicate SMALL CAPITALS.

Three lines denote FULL CAPITALS.

Four lines denote *ITALIC CAPITALS.*

A single wavy line indicates **lower-case bold-face type.**

Two wavy lines indicate **BOLD-FACE CAPITALS.**

The addition of new matter

If new matter is to be added to the copy after the pages have been numbered, insert as follows:

If only a few words are to be added, they may be written in the margin and the place of insertion indicated by a caret (∧), or between the lines and directly above the caret.

If more than a line but less than a page is to be inserted, it should be written on a separate sheet, and some identification mark, such as an asterisk (*), should be made on the copy at the point of insertion and also on the new sheet.

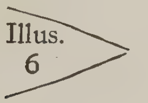
If a page or more is added, following page 15, for example, each new page should be numbered in consecutive order—15a, 15b, 15c, and so on. Indicate the pages to be added at the bottom of page 15. If the new pages are to be inserted in the middle of the page, mark the place of insertion and write the numbers of the pages in the margin of the copy.

The elimination of matter

If one or more pages are to be eliminated after the copy has been numbered, the numbers of the omitted pages should be added to the page preceding the omission. Thus the omission of pages 7, 8, and 9 is noted by giving page 6 the numbers "6, 7, 8, 9" or "6 to 9." When this is done the printer will understand that pages are not lost.

The use of illustrations

Illustrations should be numbered and their respective places in the text should be indicated carefully by writing the number in the margin in the manner indicated below. This must be done to prevent misplacement, as all illustrations are taken out of the manuscript by the publishers for reproduction, sometimes by other concerns, and they appear separately in proof until page proof is reached.



D. PROOFREADING [12]

Printing offices and publishing houses employ professional proofreaders to correct the mistakes of their compositors and to rectify or call attention to errors of the authors. For the first class of work the proofreader must have a thorough knowledge of typography, a complete mastery of the many technical rules and customs in the printing industry; for the detection of errors by the author the proofreader should have a liberal education and a special knowledge of printers' English. Much of the manuscript copy that comes into the printers' hands is improperly punctuated and carelessly composed so that it contains many imperfect sentences, anachronisms, barbarisms, solecisms, and so on. These are to be detected by the proofreader and called to the attention of the author for correction.

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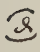
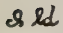
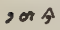
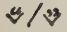
[12] See Arnold Levitas, *op. cit.*, pp. 172-202; *A Manual of Style* (The University of Chicago Press, Chicago, 1925), 8th ed., pp. 187-197; *Style Manual of the Government Printing Office* (United States Government Printing Office, Washington, 1926), pp. 2-3; Albert H. Highton, *Practical Proofreading* (United Typothetae of America, Chicago, 1926); H. B. Cooper, *Tip-Offs for Proofreaders* (John W. Lea, Philadelphia, 1927); John Franklin Dobbs, *Proofreading and Style for Composition in Writing and Printing* (John F. Dobbs, The Academy Press, New York, 1928).

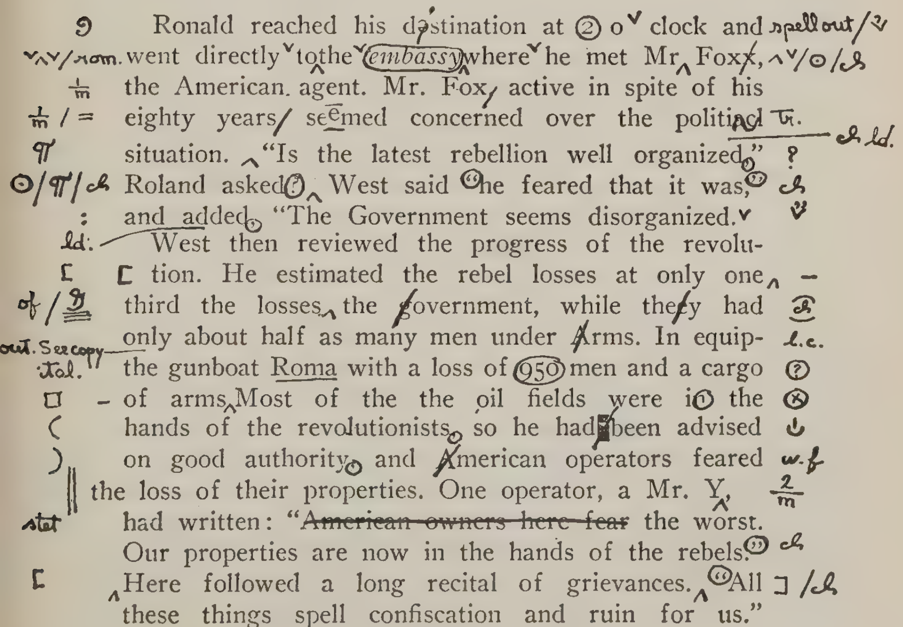
The author likewise is commonly called upon to read proof. He, therefore, should familiarize himself with the proofreader's tools. To this end the following marks illustrate the commonly accepted ways of marking proofs for correction. All notations and marks are to be made in the margin, except that the following marks alone are used in the text to indicate where corrections are to be made: the caret (∧), inverted caret (∨), underscoring line (____), transposition mark (∼), close-up marks (⁐), circle (○), and the slanting stroke (/).

The author should receive from the publisher two proofs—"galley proof" and "page proof"—and sometimes "plate proof." All possible changes should be made in the galley proof; changes made in page proof may involve the rearrangement of all the type for an entire chapter, and this is expensive. The first reading of galley proof should be mechanical, each word and punctuation mark should be examined for mechanical imperfections without regard to their sense. A second reading should check for mistakes in the use of words and marks, for imperfect sentence structure, and for errors of fact or thought. In reading page proof especial attention should be given to the matter of omitted or transposed lines, especially at the top and bottom of each page, and to the correct placing of footnotes and illustrations.

^	Caret. Placed at the point in the text where an insertion is to be made; the matter to be inserted is written in the margin.
/	Stop mark. To separate corrections where there are several in the same line. Always place the stroke to the right of the mark, whether the mark is on the right or left margin of the proof. Also placed to the right of punctuation or other marks that would be obscure if left alone.
	Delete mark. Expunge or delete the letter, letters, or words indicated.
	Delete and close up. When a letter is to be removed from within a word the close-up marks will indicate that the word is not to be left split into two parts.
#	Space mark. Used in the margin to indicate that a space should be inserted at the place indicated by a caret in the text.
	Less space. Place an inverted caret (V) above the place in the text where the spacing is to be reduced.
⊙	Insert period. Use caret to indicate the place where period should be inserted.
	Take out lead between lines.
	Insert comma.
-/	Insert hyphen.
:/	Insert colon.
	Insert apostrophe. The inverted caret is used with the apostrophe to distinguish it from the comma. Use the caret in the text at the place where the apostrophe is to be inserted.
	Insert quotes.
□	Insert em quadrat. In printing, a quadrat is a block or type-metal lower than the type, and used for filling out lines, spacing between words, etc. There are four sizes: en (▮), em (■), two-em (■■), and three-em (■■■).
$\frac{1}{m}$	Insert one-em dash.
$\frac{2}{m}$	Insert two-em parallel dash.
↓	Push down space. Used to call attention to a space or quad that has worked up in the type-matter. Indicate the place of correction within the text by a stop mark or stroke (/).

⁐	Close up. Used both in margin and over and below the matter to be corrected or drawn together in the text.
9	Turn to proper position. The word or letter to be turned should be underscored.
[or]	Move to left or right.
⊓ or ⊔	Move up or down.
tr.	Transpose letters or words indicated. Either underscore the matter to be transposed or use the transposition mark (∼).
stet.	Let it stand. Used to restore something previously deleted by mistake. Mark margin with "stet" and put a line of dots under the matter to be retained.
⊗	Broken or defective letter. Draw a line through the defective letter in the text.
¶	Make new paragraph.
no ¶	No paragraph.
//	Straighten crooked line.
wf. or w.f.	Wrong font. Indicates that the marked type is not of a size, face, and so on, corresponding with that with which it is in contact.
=	Line up letters out of alignment. Draw one line above and one below the matter to be corrected.
‖	Justify lines or make them even. To square up the beginning or ending of lines in page proof.
∨∧ or eq#	Equalize spacing. The spaces in the line to be equalized are marked with an inverted caret above for less space and with a caret at the bottom for more space.
[/]	Set in brackets.
(/)	Set in parentheses.
↓ or ↑	Insert superior or inferior figure "one" (1).
≡ or caps.	Set in full capitals. Three lines are drawn under words to be capitalized.
= or s.c.	Set in small capitals. Two lines are drawn under words to be set in small capitals.
l.c.	Set in lower-case or small letters.
— or ital.	Set in italics. One line is drawn under words to be set in italics.
rom.	Set in Roman or plain type.
≣	Use italic capitals. Four lines are drawn under words to be set in italic capitals.

∼∼	Use lower-case bold-face type. The wavy line is drawn under the words.
≈≈	Use bold-face capitals. Two wavy lines drawn under the words as above.
bf. or ff.	Set in bold-face or full-face type the letters underscored in the text.
|	A single line drawn down the left side of any part of the manuscript indicates that this matter is to be set in one size smaller type than the text.
‖	Two such lines indicate two sizes smaller type than the regular.
] or □	Side-note is indicated by writing the words in a box or three-quarter box marked on the manuscript on the side where it is to be set.
fi	Logotype (a type bearing two or more letters, as "fi") to be used where indicated in the text.
æ	Diphthong to be used where indicated in the text.
spell out	Spell out the figures or abbreviations encircled in the text.
see copy	Indicates that matter has been left out from copy.
(?)	Query to author. Is this correct?



Ronald reached his dastination at 2 o clock and
went directly tothe embassy where he met Mr Foxx,
the American. agent. Mr. Fox active in spite of his
eighty years seemed concerned over the politiacl
situation. "Is the latest rebellion well organized"
Roland asked? West said he feared that it was,
and added "The Government seems disorganized.
West then reviewed the progress of the revolu-
tion. He estimated the rebel losses at only one
third the losses the government, while they had
only about half as many men under Arms. In equip-
the gunboat Roma with a loss of 950 men and a cargo
of arms Most of the the oil fields were in the
hands of the revolutionists so he had been advised
on good authority and American operators feared
the loss of their properties. One operator, a Mr. Y,
had written: "~~American owners here fear~~ the worst.
Our properties are now in the hands of the rebels.
Here followed a long recital of grievances. All
these things spell confiscation and ruin for us."

CHAPTER XIII

SOME STANDARD PRACTICES IN WRITING[1]

A. PUNCTUATION

The uses of punctuation

Punctuation marks are used mainly to show the grammatical relation between words, phrases, clauses, and sentences; but also to indicate tone, to regulate pace, or for emphasis; to indicate something concerning the formation, use, or omission of words or parts of words; and to refer the reader to some other part of the work. No more marks, or stops, should be used than is necessary to make the text clearer to the reader. A good rule is to write so clearly that stops are not essential to a correct understanding of the thought expressed, for stops are mere guides to the reader; they should not be used to change the usual meaning of words.

Types of punctuation

(1) Grammatical punctuation marks:

period	(.)	comma	(,)	brackets	[ ]
colon	(:)	dash	(—)	apostrophe	(’)
semicolon	(;)	parentheses	( )		

(2) Rhetorical punctuation marks:

exclamation point (!)
question or interrogation point (?)
dash (—)
quotation marks or quotes, single or double (“. . .”, ‘. . .’)

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[1] All that is attempted in this chapter is to give, for reference use, the most generally used rules of literary style. This is not intended as a general treatise on grammar. For a more extended discussion see Arnold Levitas, *Editorial English* (Roy Press, New York, 1924); F. H. Vizetelly, *The Preparation of Manuscripts for the Printer* (Funk and Wagnalls Co., New York, 1924); *A Manual of Style* (University of Chicago Press, Chicago, 1925); W. D. Orcutt, *The Desk Reference Book* (Frederick A. Stokes Co., New York, 1926); Edwin C. Woolley and Franklin W. Scott, *College Handbook of Composition* (D. C. Heath and Co., New York, 1928).

(3) Etymological punctuation marks: (Not discussed.)

(4) Reference punctuation:

asterisk or star (*)
dagger or obelisk (†)
double dagger or diesis (‡)
section (§)
parallel (‖)
paragraph (¶)
index (☞)
N.B. (note bene or note well)
asterism (* * *)
superior figures ($^{1,\ 2}$)
superior letters ($^{a,\ b}$)
ellipsis (. . . or * * *)
leaders (. . . . .)

The comma

The comma indicates the smallest degree of separation and is properly used to indicate to the reader the exact meaning of the sentence. Important uses of the comma are: (1) To set off a word or words of address or salutation incorporated in the body of the sentence[a]; (2) to separate a series (more than two) of nouns, adjectives, adverbs, or phrases, used absolutely or modifying the same word, which are connected by conjunctions expressed or implied[b]; (3) to set off the following words and phrases, either at the beginning or within a sentence when referring to what has gone before, or enumerating in a general sense what is to follow: *first, finally, besides* (object omitted), *meanwhile, however, therefore, of course, on the other hand, for instance, that is, moreover, indeed, after all,* and so on; (4) after an inverted phrase or clause[c]; (5) after a participial phrase at the beginning of a sentence[d]; (6) to separate the subject and predicate if the one ends and the other begins with a verb[e]; (7) to indicate the omission of a verb or verbal phrase, or noun or nominal phrase, in a compound sentence[f]; (8) to set off a short quotation or maxim incorporated as part of the sentence[g]; (9) to divide large numbers into groups of three figures denoting thousands, millions, and so on; and to separate two unrelated numbers, and month and year, except in display lines[h]; (10) before and after parenthetical or modifying clauses or phrases that are structurally disconnected, but logically integral, interpolations.[i] Dashes or parentheses should set off insertions that are both structurally and logically disconnected from the rest of the sentence. (11) The comma should never be used with the single dash. If dashes are used to set off a parenthetical clause, commas are used before each dash if a comma would be required at the break in the absence of the parenthetical clause—otherwise no commas are used. Set the comma within the quotation marks but outside the parentheses.

[a] Mr. Chairman, I rise to a point of order.
You are, Sir, out of order.
[b] He was a tall, spare, and slightly stooped person.
[c] In the interest of science, he sacrificed his fortune and his health.
[d] Turning upon his heel, he walked away.
[e] Whatever you do, do it soon.
[f] The defense made a plea for mercy; the prosecution, for justice.
[g] His comment was, "I am content with the verdict."
[h] The painting sold for $75,000.
In 1920, 862 laws were enacted.
May, 1927.
[i] It is the most logical, if not the most satisfactory, solution.

The semicolon

The semicolon is used to mark a more distinct break in sentence structure than is usually indicated by a comma, or to separate sentences too closely connected to be printed separately. It separates and distinguishes the principal from the subordinate parts of a compound or complex sentence. Use the semicolon: (1) To separate the clauses of compound or complex sentences, if any of the clauses are complex in construction or are subdivided by commas,[a] or if the clauses are not joined by a conjunction,[b] or are joined by a conjunctive adverb;[c] and (2) to connect successive sentences.[d] The semicolon should be placed outside the quotation marks and outside a closing parenthesis, unless it is a part of the quotation.

[a] "To please universally was the object of his life; but to tax and to please, no more than to love and be wise, is not given to men."
[b] He did not speak English; he spoke French.
[c] The train was late; so he missed his appointment.
[d] It was an eerie night; shuddering sounds came out of the enveloping darkness; bats fluttered about the camp fire; an owl screeched mournfully from a nearby tree.

The colon

"The colon should be used when the preceding part of a sentence is complete in sense and construction, and the following part is a statement naturally arising from it, and depending on it in sense, though not in construction."[2] Generally accepted uses of the colon are the following: (1) It is used to introduce a formal statement, a speech in a dialogue, and a direct quotation, if of one or more new sentences or paragraphs. A dash may be used to introduce a part of a sentence. Do not use the dash with the colon. If some phrase, such as *he said,* is interpolated within the quotation, a period should close the sentence preceding the matter quoted. The colon often implies some expression such as *namely, for instance,* or *as follows.*[a] (2) It is placed before a formal list, and after such words as *namely, for example,* and *as follows,* when they are followed by a statement or enumeration. But use a comma if what follows these introductory words does not consist of one or more grammatically complete clauses.[b] The colon should be placed outside quotation marks unless it is included as part of the quotation itself.

[a] Mr. Chairman, Ladies and Gentlemen: (Followed by an address or statement).

The court said: (Followed by an extended quotation).

[b] The defects of the primary system may be outlined as follows: (1) It adds very greatly to the burden of the ballot. (2) It increases the cost of elections. (3) It encourages factionalism within the party. (4) And so on.

Copy these words: (Followed by a list of words).

The period

Use the period: (1) At the end of a declarative or imperative sentence[a]; (2) after abbreviations, except after chemical symbols, the format signs of books, and after *per cent*[b]; (3) after contractions when the omitted letters are not replaced by an apostrophe. Use the period with words commonly contracted, and the apostrophe, without the period, in words not commonly contracted.[c]

Set the period inside the quotation marks. Set it inside the closing parenthesis or bracket if the parenthetical matter by itself is a complete independent sentence; otherwise the period is placed outside.

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[2] C. B. Ives, *Text, Type, and Style* (Atlantic Monthly Press, Boston, 1921), p. 74.

Do not use the period: (1) After Roman numerals, as they are not abbreviations, except in enumerating items or indicating literary subdivisions[d]; (2) after any display signs; centered headlines, running-heads, side-heads, box-heads in tables, superscriptions and legends of not more than a single line or type, items in enumerated lists, date lines heading communications, and signatures.[e] (3) Do not repeat the period after an abbreviation which ends a sentence, but retain all other punctuation marks with the period.[f]

[a] Open the window.
He asked me where I lived.
[b] Fe 8vo ft.
[c] assn. or ass'n dept. not dep't.
[d] Henry VI Volume I
I. The Organization of Congress.
[e] See pages 297-298 above for examples.
[f] He left the office at 8 P.M., but did not get home before 1 A.M.

The dash

There are four commonly used forms of the dash—the *en,* the *em,* the *2-em,* and the *3-em,* indicating the order of their length. The term *em* indicates the square of the body of any size of type, and is used as a unit of measurement in computing the size of pages, the cost of composition, and the size of dashes, spaces, and so on.

The en-dash is half the length of the em-dash and stands for the word *and* or *to* in such phrases as *pages 2-7* and *the Progressive-Republican group.*

The em-dash, or dash proper, has the following principal uses: (1) A dash should not be used ordinarily with any other point, except with a period in connecting side-headings to the subject matter on the same line (although the dash is not necessary) and before the authority cited at the end of an extract.[a] (2) It may be used to mark an abrupt change in the sense or construction of a sentence, especially when a sentence is left unfinished.[b]

(3) "To introduce a summing up or explanation of, or a 'preferable substitute' for what has gone before [c]; or to mark arrival at the principal sentence after a long or confused subordinate clause."[3] (4) It is used to indicate emphasis.[d] (5) It may be used interchangeably with the colon to introduce a list, or enumeration. (6) Used in pairs, dashes take the place of parentheses to set off parenthetical matter which is too closely connected with the rest of the sentence to be inclosed within parentheses and not closely enough connected to be set off with commas.[e] (7) Used without space before the first words of subentries in indexes or bibliographies, it saves repeating the cue words.

The 2-em dash is used to represent an omitted name or the omitted letters of a name, or, following a date, to indicate time as still continuing.[f]

The 3-em dash is used (with space on each side) to denote the omission of a whole word, or, in bibliographies, to indicate the same author as in the preceding title.

[a] —Wilson, *The State.*

[b] They say you have—no, I cannot believe it of you.

[c] A people independent of foreign control, a territory sufficient to maintain the people, a constitution, and an organized government to which the people give habitual obedience—these are the essential elements of a state.

[d] The work of a lifetime was destroyed—destroyed in a moment of folly.

[e] Two of the States—Iowa and Minnesota—repealed the law after one year's trial.

[f] It was Mr. R——from the town of W——who addressed us.

The hyphen

Use the hyphen, one-third em in width, (1) between the component parts of a compound word[a]; (2) after the several elements of a compound word made up for the occasion by the writer[b]; (3) to indicate an incomplete word at the end of a line; and (4) to take the place of the preposition *to.*[c]

[a] one-third

[b] what-you-may-call-it

[c] 1876-1880

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[3] Ives, *op. cit.*, pp. 127-140.

The parentheses

The parentheses may be used (1) to inclose numerals or letters indicating divisions and subdivisions of a subject; (2) to inclose the references to the sources from which quotations or statements are taken, if such references are embodied in the text instead of being placed in footnotes; (3) to inclose an interpolated question mark or exclamation point (in a direct quotation brackets should be used) to express doubt, irony, and so on; and (4) to inclose parenthetical matter if confusion might arise from the use of other marks, or if the clause is irrelevant to the main thought but is put in to explain or qualify what precedes.

Matter inclosed within parentheses should be punctuated independently of the rest of the sentence. If a punctuation mark is required at the end of that portion of the sentence immediately preceding the parenthetical interpolation, the mark should be placed after the second curve of the parentheses. If the parenthetical inclosure is a complete sentence, the required closing mark should be set within the second parenthesis, and the appropriate mark for the closing of the preceding sentence should be placed before the first curve. If the parenthetical matter is part of the sentence, the punctuation mark, if any, should be placed after the last curve.

When a parenthetical expression occurs within another, use commas or em-dashes for the outer and parentheses for the inner inclosures, or vice versa; or use brackets for the inner and parentheses for the outer inclosures.

The brackets

Brackets are used almost exclusively to inclose something interpolated within a quotation, that is, something that is not a part of the quotation. This matter may be explanatory or a correction. Sometimes the brackets are used to inclose the name of a person referred to by a pronoun, and, in the Congressional Record, the name of the Senator or Representative referred to by a speaker. They are also used to inclose an editorial explanation or note, and for parentheses within parentheses.

The rules given above for the placing of punctuation marks in relation to the parentheses apply also to the use of brackets.

The apostrophe

The apostrophe is used (1) as the sign of the possessive case—before the *s* in the possessive singular and in plurals not ending in *s*; after the *s* in plurals ending in *s* [a]; (2) to indicate the omission of a letter or words in a contraction, or the omission of figures in dates [b]; and (3) to denote the plural form of single words, letters, or phrases.[c]

If the word *sake* follows a possessive singular ending in *s*, it is not customary to add the *s* after the apostrophe.[d] The apostrophe is often omitted in the possessive, singular and plural, of titles, names of business firms or corporations, and in geographic names.[e]

[a] Mary's lamb Girls' books

[b] He'll do. The convention of '87

[c] There are many if's in life. Dot your i's and cross your t's.

[d] For Jesus' sake

[e] Peoples Bank and Trust Company

The exclamation mark

As the exclamation mark is used after interjaculatory phrases, clauses, or sentences expressing invocation, entreaty, command, passion, wonder, emotion, surprise, contempt, or irony, its use should be avoided in research. Exclamatory sentences indicate a lack of objectivity and their use is not scholarly.

The question or interrogation point

The question mark may be used (1) after a direct question, or (2) in place of an unknown name, fact, or date, or (3) within parentheses (brackets, if within a quotation) to challenge the accuracy of what precedes. The question mark should be set inside the quotes or parentheses only when it is a part of the quoted or parenthetical matter.

The quotation marks or quotes—single and double

Quotes are properly used (1) to inclose a direct quotation; (2) to inclose words in the text having an unusual, technical, or ironical meaning [a]; (3) with a quasi-quotation, that is, with a sentence following such sentences as *I said to myself* and *I might* *have said*—a quotation that is direct in form but is not of words actually spoken.

If an uninterrupted quotation contains more than one paragraph the opening quotes should be used at the beginning of each paragraph, but the closing quotes should be placed only at the end of the last paragraph. Also, if the matter quoted covers more than one paragraph, the first part thereof should not begin within the preceding paragraph of the text but should be written as a separate paragraph. If such a quotation begins in the middle of a sentence it should be preceded with ellipsis points to indicate the omission.

The first word of a quotation incorporated into and used as part of another sentence may be kept down. "If a quoted passage consists of a complete sentence, with subject and predicate, it is the better practice to begin it with a capital; otherwise, if it is only a phrase, or a part of a sentence that is completed by the unquoted text." [4]

Interpolated explanatory words or side-remarks, such as *he said,* should not be included within the quotation marks.[b]

Quoted passages may be set in smaller type without the quotes. This is frequently done where the quotations are numerous. Quotation marks should not be used, as a rule, with italics; the important exception would be when italicized foreign phrases or sentences are quoted in the English text. It is also the custom to omit the quotes from well-known and generally recognized matter, such as proverbs and sayings from the Bible.

Quotes should not be used with indirect quotations, or with foreign words or phrases except under the same conditions as with English ones.

A quotation within a quotation is set off by single quotes. Some writers use single quotes for indirect quotations. Use double quotes for a third quotation within a primary quotation, single for a fourth, and so on.

"The quotes are always set outside the comma and the period; always inside the colon and semicolon; outside or inside the marks of exclamation and interrogation, according as those marks do or do not belong to the quoted matter; outside the dash when it stands for something left unsaid, and inside when it is used as an ordinary punctuation mark; inside parentheses when the parenthetical clause alone is quoted, otherwise outside."[5] They should include ellipsis points, and the phrase *etc.* when it otherwise would not be clear that it indicates an omission or ellipsis.

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[4] Ives, *op. cit.*, p. 160.

[a] These self-styled "guardians of liberty" are liberty's worst enemies.
Manuscript prepared for a printer is called "copy."
[b] "Take this," he said, "and be gone."
"Will you come?" he asked.
"Will you bring the book?" he asked. "I want it."

The ellipsis points

Three points are used to indicate the omission from a quotation of one or more words, and also to indicate illegible words, mutilations, and similar omissions in the material quoted. Whatever punctuation mark closes the quoted matter immediately preceding the ellipsis should be included as part of the quotation, and must not be regarded as part of the ellipsis mark. The space before the first ellipsis point should be the same as the space before the first word omitted. The ellipsis points should be separated by 3-em spaces. If a whole paragraph of prose or a full line of poetry is omitted, indicate ellipsis by inserting five points centered, or a full line of points separated by em or 2-em spaces.

Do not use ellipsis points to indicate the omission of one or more paragraphs or one or more sentences before or following the quoted extract. Use these points for elisions within the quotation: before the quoted matter if the first part of the opening sentence is omitted; and after the quotation if the closing sentence is not completed, in which case the three ellipsis points are followed by a fourth point, the period. Ellipsis points should not be used if the quotation is less than a complete sentence and if it is used as part of another sentence. To use them in such a case is to break up the text unnecessarily, as it is otherwise clear to the reader that the quoted matter is only a borrowed fragment.

The ellipsis points should be included within the quotes.

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[5] Ives, *op. cit.*, p. 154.

Section mark and paragraph mark

The section mark (§) and the paragraph mark (¶) indicate divisions of a work. The section mark followed by a number is commonly used in law books, and such a numbered section may contain several paragraphs, each of which may or may not be preceded by the paragraph mark and a number. The numbering of sections is usually continuous throughout the work while the paragraph numbering is continuous for each section only.

Leaders or dots

Leaders are marks connecting one part of a line to another, as in tables and display-work. Dots are commonly used but hyphens may serve the same purpose.

Footnote reference marks

For a discussion of the use of symbols and superior figures and superior letters or reference indexes, see Chapter XII.

B. ABBREVIATION

Abbreviations should be used rarely in the text, except in quotations and in commercial works where there may be much tabular matter. The following abbreviations are properly used: (1) Common titles, when accompanied with proper names, are abbreviated.[a] All other titles used as parts of names should be spelled out.[b] (2) Abbreviate and set in capitals honorary titles and university degrees.[c] (3) In parenthetical references, footnotes, or in bibliographies, abbreviate any word designating a part of a literary work when followed by a number.[d] (4) Abbreviations of time and epochs are permissible, using small capitals or lower-case type for the former and small capitals for the latter.[e] (5) The names of months and days may be abbreviated in commercial or statistical work. In ordinary text it is better not to abbreviate, though the names of the month may be abbreviated if the day of the month is also given, but not if the name of the month is used alone or is followed only by the year. Do not use *d, rd, st,* or *th* after dates given in figures.[f]

Avoid the use of the following abbreviations in the text, except in commercial work: *i.e.* (that is); *e.g.* (for example); *viz.*

(namely); *prox.* (proximo); *ult.* (ultimo); *inst.* (instant); *etc.* or *&c* (et cetera, or, and so on). *&c* should never be used in the text and *etc.* should be avoided whenever possible.

The ampersand or "short and" (&) should be used only in the established names of firms or corporations, and only between proper names. Abbreviate the words *Company* and *Brothers,* when forming part of such names, only when so done by the firm. As a rule *Brothers* and *Company* should be abbreviated only when following *&.*[g]

Per cent, without a period, should be used only with figures, as *10 per cent,* but *a large percentage of the voters.* The character % should not be used in the text except in commercial work.

Given or first names should not be abbreviated except when quoting or in tabular matter. However, the initials only of first names may be given if it is desirable to economize space.[h]

Do not use *ult., inst.,* or *prox.*; name the month.[i]

All references in the text to works, parts, chapters, sections, and so on, should be spelled out.

Do not abbreviate the names of states except when used after the names of towns and in footnotes or bibliographical or statistical matter. Also do not abbreviate parts of geographic names (except that Saint is abbreviated) unless they appear in tabulations, footnotes, or bibliographical matter.[j] If geographic abbreviations are used the writer should follow the forms approved by the Post Office Department or the Government Printing Office.

[a] Mr. Mrs. Messrs. M. Mme. Mlle. St. Dr. Jr. Esq. St.

[b] Senator Jones
The Honorable William Jennings Bryan
The Reverend Smith
Professor Jones

[c] A.B. A.M. Ph.D. Litt.D. M.D. F.R.S. D.D.

[d] Vol. I (Vols.), volume
Chap. II (Chaps.), chapter
st. 6, stanza 6
§ 2 or sec. 2 (secs.), section
l. 6 (ll.), line
Fig. 3 (Figs.), figure
¶ 8, paragraph 8
p. 8 (pp.), page
pp. 8 *f.*, page 8 and the following page
pp. 8 *ff.*, page 8 and the following pages
pp. 8-9, pages 8 to 9
ed. (ed.), edition
No. 6, not #6 (Nos.), number
Art. ii (Arts.), article
vs. 9 (vss.), verse
n. 3 (nn.), note
Bk. II (Bks.), book

(All of the preceding forms are capitalized if placed at the beginning of the footnote.)

[e] A.M. (ante meridian)
a.m.
P.M. (post meridian)
p.m.
M. (meridian)
m.
B.C. (before Christ)

A.D. (Anno Domini, in the year of our Lord)
A.M. (anno mundi, in the year of the world)
A.H. (anno hegiræ, in the year of the flight)
A.U.C. (anno urbis conditæ, in the year of the founding of the city)

[f] Jan. Wed. July 3 (not July 3rd) Jan. 2, 1927 January, 1927

[g] Scott & Tilson Manufacturing Co.
American Smelting and Refining Company

[h] James F. Cooper (not Jas. F. Cooper)
J. T. Cooper

[i] July 3 (not 3rd inst.)

[j] Fort Dodge
Mount McKinley

Port Arthur
St. Paul

C. CAPITALIZATION

Good usage approves the use of capitals for the initial letter in the following cases[6]: (1) Titles, with or without the names of the holders, used to designate a *particular* high official or dignitary, past or present, religious, civil, or military, are capitalized.[a] But the titles of lesser officials, such as governor and mayor, should be capitalized only when used with the name, unless this person is given special prominence. Titles are not capitalized (except titles of potentates in official documents) if they follow the name.[b] (2) Words indicating relationship when used with the name of the person and without the possessive pronoun are kept up.[c] (3) Capitalize all abbreviations for degrees and titles, and abbreviations consisting of one letter, except units of measurement and minor literary subdivisions.[d] (4) Capitalize both elements of a hyphenated title, if the first element is capitalized.[e] (5) Capitalize nouns and proper adjectives except words derived from proper names that have acquired a special meaning or have lost the original sense of the name.[f] (6) Epithets or nicknames used as proper names or affixed to names are capitalized.[g]

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[6] It is common in printing to speak of keeping a word up, that is, capitalizing the word; or keeping it down, that is, using small letters.

[a] The President addressed Congress today.
Your Excellency   Your Honor   His Majesty
[b] Governor Smith
Woodrow Wilson, president of the United States
[c] I heard that Uncle George is living with my aunt Mary.
[d] Ph.D.   F. (Fahrenheit)
M. P.   C. (Centigrade)
[e] Attorney-General
[f] James   fletcherizing
American   morocco leather
Congressional   pasteurized milk
[g] the Conqueror   Richard the Lion-Hearted
the Liberator   Bloody Mary

(7) Capitalize such words as *Cabinet, Ministry, Government,* and *Administration,* when they refer to *existing* bodies of officials; also the names of government departments and bureaus, and other high governmental bodies.[h] But the words *department, bureau,* and so on, should not be capitalized if they are not used to designate a specific agency. (8) Capitalize the word *Church* when used to denote the religious organization of a state or of the world; also when used as part of a name. (9) The word *State* when it denotes the political organization of a state or of the world, standing in apposition to *Church* is capitalized; also when used in a special sense (noun or adjective, singular or plural), as *the State of New York, the State courts, the Central States*; but it should not be capitalized if it refers to political bodies generally, as *a state assumes responsibilities under international law.* (10) Capitalize such words as *Empire, Union, Republic, Dominion,* and *Kingdom,* when used to represent a particular state; also when used as part of a name; (11) the names of great historic events or periods, and civic and religious festivals and holidays[h]; (12) the names of important assemblages, agreements, and documents[i]; (13) names of political, religious, artistic, or literary groups or orders[j]; (14) official titles of organizations and institutions[k]; (15) creeds and confessions of faith, and nouns and adjectives used to designate the

Deity, or a member of the Christian Trinity[l]; (16) the names of geographical and regional divisions, sections, or zones[m]; (17) personifications[n]; (18) ordinals used in names of dynasties, individuals, or organizations in succession. Roman numerals are used following names of persons.[o]

[h] the Restoration
the Inquisition
the Crusades
the Civil War
the Fourth of July
Christmas
Memorial Day

[i] London Conference
Treaty of Washington
Peace Conference
the Armistice
the Magna Charta
the Statute of Laborers
Declaration of Independence
Sherman Anti-Trust Law

[j] Democratic Party
Jesuit
Stoic
Masonic
Methodist
Tory

[k] American Federation of Labor
Tammany Hall
New York Central Railroad
Salvation Army

[l] Apostles Creed
Holy Ghost
Augsburg Confession
the Almighty

[m] Rocky Mountains
Missouri River
the Middle West
the Southern Confederacy
the East Side
the Orient
the Arctic

[n] Grim Death stalked through their ranks.

[o] the Sixty-Sixth Congress
the Fifth Training Regiment
Henry VIII

(19) Keep up nouns, pronouns, verbs, adverbs, adjectives (including all the component parts of hyphenated nouns and proper adjectives), and first and last words in the titles of books, documents, reports, and proceedings, and of the parts, chapters, and sections of works (except in side-heads when the first word alone is capitalized); (20) terms used with Roman numerals as titles[p]; (21) the first word following *Whereas* and *Resolved* in resolutions; (22) the vocative *O*, but the exclamation *Oh* only when it stands alone or begins a sentence.

[p] The Fundamental Concepts of Public Law
An Anglo-American Tournament of Well-known Sportsmen
Chapter II Part I

D. ITALICS

Italics may be used in the following cases: (1) For titles of books, periodicals, newspapers, legal cases, and pamphlets, both in the text and footnotes; (2) with foreign words and phrases, unless so commonly used as to have become Anglicized, and (3) with the following words and abbreviations mainly of Latin words: *ibid., e.g., ad loc., vide, id., i.e., op. cit., et seq., loc. cit., ubi, sup., cf., et al., infra, passim, supra.* These abbreviations are used in footnotes, but should be kept out of the text if possible. The following are commonly not italicized: *etc., viz., inst., prox., ult., cf.,* and *v.* or *vs.,* unless ambiguity would result, as where they stand between terms not themselves italicized. (4) For emphasis, but avoid this practice as far as possible since it does not improve the appearance of a page set in Roman.

E. USE OF NUMERALS

Statistical matter, appearing in mathematical or statistical texts (dates, decimals, degrees, dimensions, distances, enumerations, money, percentage, weights, and the like), should be expressed in Arabic figures.[a] And use Arabic figures for the names of years[b]; the days of the month if the date is given in full[c]; numbers of pages or sections of books[d]; for sums of money which include dollars and cents[e]; and ordinarily for any number that would require three or more words.[f] Do not use ciphers with numbers indicating sums of money, except when the figures are arranged in columns.[g] Figures should not be used at the beginning of a sentence.

In ordinary text spell out isolated numbers of less than three digits,[h] and round numbers, that is, approximate figures in units of 100 or 1000.[i] A series of numbers should be expressed in figures if any one of them contains three or more digits. Spell out a sum of money used as an adjective,[j] and a sum indicating only cents.[k] When two numbers occur together avoid confusion by spelling out the first and using Arabic figures for the other.[l]

Spell out the following when used in ordinary text: numbers of centuries,[m] of sessions of political or other bodies,[n] of political divisions, and of thoroughfares[o]; the time of day[p]; the age of a person or object[q]; references to particular decades.[r]

[a] It took him 6 days working 60 hours to earn $6.

[b] The panic of 1907

[c] October 9, 1927

[d] Article I, Section 2

[e] He paid $80.75 for a coat.

[f] This magazine has 171 columns of reading matter and 123 columns of advertisements.

[g] He paid $3 for the book and sold it for $10.

[h] He ran fifty yards in ten seconds.

[i] He won by thirty-thousand votes. (But, 30,600 votes.)

[j] He lost a twenty-dollar bill.

[k] The price is seventy-eight cents.

[l] He sent fifty 10-inch shells.

[m] Twentieth century

[n] Sixty-Sixth Congress, First Session

[o] Second Ward
Sixth Street

[p] It is now five o'clock.

[q] He is seventy-five years old.

[r] He died in the early eighties.

F. DIVISION OF WORDS

A word should not be divided at the end of a line unless such division is unavoidable. If division is necessary, observe the following rules:

(1) The American rule is to divide according to pronunciation while the English rule is according to derivation.[a] (2) Compound words should be divided on etymological lines, or according to meaning and derivation, if compatible with pronunciation.[b] (3) Divide on a vowel when possible, treating a diphthong as a single letter.[c] (4) If the pronunciation permits, separate two consonants

standing between vowels and, if three consonants appear together, divide on the first consonant.[d] (5) Do not divide words of two syllables pronounced as one.[e] (6) Do not put on different lines the initials of a name; and, if compatible with the rules of good spacing do not separate the initials of a name from the name itself, or divide proper names, particularly names of persons. (7) If possible, divide hyphenated words on the hyphen.[f] (8) Do not divide sums of money expressed in figures, if avoidable. (9) The suffixes, *-ing*, *-er*, and *-ed*, are not divisible, and, if separately pronounced, form separate syllables. If, however, the final consonant of the root is doubled when the suffix is added, rule (4) above applies.[g] (10) Such terminations as *-cal, -tant, -tive, -nal, -nous, -ter, -able,* and *-dence* should not be broken.[h] (11) One-letter endings are not allowed, and two-letter endings should be avoided if possible.[i]

[a] democ-racy, not demo-cracy
[b] straight-forward, not straightfor-ward
[c] sepa-rate, not sep-arate
[d] admis-sion, wrin-kle
[e] walked
[f] vice-chairman, not vice-chair-man
[g] mat-ed, but win-ning
[h] produc-tive
[i] elope, not e-lope radi-ology, not ra-diology

G. COMPOUND WORDS

A compound word is a combination of two or more words for the purpose of expressing another meaning. Compound words may be solid or hyphenated—solid if the words in the combination have lost their inherent meaning,[a] or are given a purely arbitrary meaning, except when one of the words is in the possessive case[b]; hyphenated if these words retain their inherent meaning.[c]

Two or more words used together as one word, but having no inherent grammatical relation to each other, should be compounded and hyphenated[d]; but if the words are used so as to create a grammatical relation between them (that is, if one qualifies or modifies the other), they should not be compounded.[e] However, two or more adjectives arbitrarily used together as one modifier of a noun should be compounded and hyphenated[f]; but do not compound combinations of adverbs, or of adverb and adjective, or of adverb and participle where no ambiguity will result.[g]

The common base element of two or more compound words may be indicated in all but the last by a hyphen.[h] This is a method of elliptical or interrupted compounding which may be used with hyphenated compounds but not with solid compounds.[i] Do not use the hyphen with a series of fractions.[j] Elliptical compounding should be avoided whenever possible.

Compounds with the following words and prefixes are commonly but not invariably hyphenated: *life*[k]; *world*[l]; *vice, elect, ex-, general,* when parts of a title, except military titles and where the prefix has become an accepted part of the name[m]; *quasi-*[n]; *non-*[o]; *extra, pan, ultra*[p]; *anti-, ante-, pre-, post-, sub-, super-, co-, bi-, re-,* when the added word is a proper noun, but not if joined to roots[q]; *book, house, well, shop, room,* when the prefixed noun contains two syllables, but the compound is written as one word if the noun contains but one syllable and as two separate words when the noun contains three or more syllables[r]; *maker, dealer.*[s] Also hyphenate compounds formed by combining numerals with words,[t] and compounds of nouns one of which is in the possessive.[u]

There are many variations in the use of compounds. When in doubt consult a standard dictionary.

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[a] grandmother
blueberry

[b] cat's-paw
crow's-feet

[c] gray-green walls

[d] ill-tempered
son-in-law
a go-between

[e] ill humor

[f] odd-looking

[g] grayish green walls
highly respected people

[h] a second- or third-grade investment
iron- and ore-producing sections

[i] strawberry and blackberry jam

[j] two, three, or four sevenths

[k] life-sentence, but lifetime   [l] world-politics
[m] vice-chairman, but viceroy   [n] quasi-contract
[o] non-participation   [p] ultra-conservative
[q] anti-Masonic party, but bipartisan league
[r] water-mill   sawmill   tobacco shop
[s] tool-maker (but bookmaker, dressmaker, through usage)
[t] one-armed   three-legged   [u] robin's-egg

H. DICTION

General principles. In the choice of words the writer should use those that the probable reader will understand with the least waste of time and thought. Do not use words that are not necessary to secure clarity of thought. Words used for mere ornamentation distract the reader, divert his attention from the substance to the form of the composition, and produce ambiguity. The unnecessary use (and they usually are unnecessary) of unusual, striking, and colorful words results in a garish literary style that is often employed as a substitute for ideas. This is not to say that ideas should not be presented in attractive form; it is only to insist that the language used should be merely a means to an end, and that it should be appropriate and in good taste. A studied superfluity of words is literary vulgarity; a discriminating use of words is literary artistry.

Foreign words. Refrain from the use of foreign words and phrases whenever possible. There are few ideas that cannot be expressed as clearly and as delicately in English as in any other language. Furthermore, any work which includes many untranslated passages ignores the convenience of most of the readers who are not linguists, and so is limited in its usefulness. Undoubtedly the gain from the translation of such passages is much greater than any loss that may result from lack of idiomatic equivalents, a defense usually offered by those who use such untranslated passages. The frequent use of such foreign terms is an unpardonable affectation, a parading of linguistic ability that confuses and irritates the discriminating reader. If there is a valid reason for including a passage in a foreign language, the translation should be inserted also, thus accommodating both the specialized and the general reader. There are, however, many foreign words that have become Anglicized, and are, therefore, in common use. If such words are not sufficiently acclimated to dispense with italics they should be used with discretion.

I. ORTHOGRAPHY

The English language has slowly but constantly progressed toward a more simple and more scientific basis. This progress has been more marked in the United States where there is a strong tendency toward phonetic spelling, than in England, where they continue to spell their words one way and to pronounce them another way. If, however, conservative English grammarians (who shudder at what they please to call the "American language" as distinguished from the English language) would turn back to their books of a hundred or more years ago, they would see that England's orthography has improved in spite of their time-honored formulæ. It should not be forgotten, on the other hand, that good usage is the criterion of good form, and that the innovations of today must be thoroughly tested before they become the accepted rules of tomorrow. While many of the fundamental rules of orthography are generally accepted, as sanctioned by custom and scientific standards alike, both usage and expert opinion differ as to others. It is, therefore, as correct to spell some words the accepted American way as to spell them the accepted English way, but whatever form is adopted should be used consistently throughout one particular work. The more commonly accepted American modifications of English orthography are noted below.

(1) Omit the dieresis (two points placed above a letter, as ö) in all English words, but retain it for Anglo-German words, that is, German words not thoroughly Anglicized.[a] (2) Omit the diphthong in all recognized English words.[b] (3) The common American practice is to omit the *u* from such words as *honor, armor, labor,*[c] and to use *ize* as the ending of such words as *utilize, civilize.*[d] (4) Drop *ue* at the end of words when the preceding vowel is short, but if this vowel is long retain the *ue.*[e] (5) Drop the final *te* and *me* in words of French origin that have

become Anglicized.[f] (6) Change the English form *a* to the American form *e*.[g] (7) The French ending *ique*, used in England, is commonly *ic* in the United States.[h] (8) The English ending *re* is *er* in most cases in the United States.[i] (9) The English use *ll* and *pp* in many words which are written with *l* and *p* in the United States.[j] (10) The prefix *en* is *in* in modern American form.[k] (11) Words ending in *able* or *ible* take *r*, not *rr*.[l] (12) Change the ending *ugh* to *w*.[m] (13) The final *e* is omitted in the American form, as is the *e* within many words ending in *able, ful,* and *ment*.[n] (14) Use the article *a* before a word beginning with a consonant,[o] consonant-sound,[p] or vowel with a strong aspirate.[q] Use the article *an* before a word beginning with a vowel-sound,[r] or a word in which the *h* is silent.[s] (15) Use the word *farther* to indicate distance,[t] and the word *further* as equivalent to *additional, moreover,* and *besides*.[u]

[a] cooperation, not coöperation

[b] fetus, not fœtus
esthetic, not æsthetic

[c] English form: honour, armour, labour

[d] English form: utilise, civilise

[e] demagog
fatigue

[f] duet
diagram

[g] gray (English form: grey)

[h] technic (English form: technique)

[i] theater (English form: theatre)

[j] councilor (English form: councillor)
worshiped (English form: worshipped)

[k] inclose (English form: enclose)

[l] transferable (English form: transferrable)

[m] plow (English form: plough)

[n] ox (English form: oxe)
envelop (English form: envelope)
by and by (English form: bye and bye)
salable (English form: saleable)
judgment (English form: judgement)

[o] a desk

[p] a usurper

[q] a house
[r] an airship
[s] an hour
[t] Farther down the bay
[u] He had no further use for it.

J. HOMONYMS

A homonym is a word that agrees with another in sound but differs from it in spelling and meaning. Care should be taken to use the right word in the right place. Just a few examples are indicated:

ail	ale		dew	due
beer	bier		sweet	suite
cent	sent	scent	vain	vein
rain	rein	reign		

K. SYNONYMS AND ANTONYMS

There are many words of similar but not identical meaning, and the greatest care should be exercised in choosing the word that expresses the exact shade of thought intended. Synonyms are not duplicates; each word is detailed to perform its own special office—to express a special shade of the general idea. Similar care should be exercised in the use of antonyms, or words directly opposite in meaning. The wrong synonym may have the effect of an antonym. Consider the following example:

> Lucy, my dear, you are a *vision!*
> Lucy, my dear, you are a *sight!*

L. USE OF RELATIVE PRONOUNS

(1) *Who* and *which* should not be used in defining or non-restrictive clauses except where custom or euphony requires them. Thus, *who* or *whom* should be used when the antecedent is a person or persons, always in preference to *which* and generally to *that,* even in a defining clause. *That* used of persons is archaic.[a] (2) If the antecedent is a collective noun, and is referred to later

by a singular pronoun or by no pronoun at all, use *which* in a non-defining or restrictive clause and *that* in a defining clause. But if the noun is referred to by a pronoun of plural meaning the relative should be *who* and its verb should be plural.[b] (3) If the antecedent is something animate, but not human, the proper relative is *which,* except that *who* is used if this antecedent is later referred to by a personal pronoun as if it were human.[c] (4) *That* is generally used in defining clauses, except that (a) *whose* is used when the relative is in the possessive case, and (b) *which* and *whom* follow a preposition, because *that* has no possessive case and cannot, therefore, take a preposition before it.[d] *That* should never be used to introduce a non-defining clause.

A simple but infallible test for distinguishing between the defining or non-restrictive and non-defining or restrictive clauses is to remove the clause and to observe the effect upon the meaning of the sentence; if the removal of the clause alters the meaning of the antecedent, it is a defining clause.

[a] Alfred Smith, who is the governor of New York (defining), is the man whom they cheered (non-defining).

[b] The government, *who* are all conservatives, will soon give up *their* offices to the liberals. The rabble *that* is supporting the new government is celebrating *its* victory.

[c] It was the dog, Lad, who is always with his master.

[d] The man *whose* memory I revere. The place in *which* he was born.

CHAPTER XIV

PLAGIARISM, COPYRIGHT, AND PUBLICATION

Plagiarism

The honest workman engaged in research is always anxious to see that he is free from plagiaristic tendencies. Sometimes this is not easily done because of rather broad interpretations of the various copyright laws designed to protect authors in their property. The United States copyright law, which covers everything in a copyrighted work, is rather absolute in its provisions if they be interpreted literally. The borrower can take nothing without violating the rights of the original author as protected by the law.

Until a work is copyrighted, the author is protected under the common law which insures an individual's rights in his own property. "That an author, at common law, has a property in his manuscript and may obtain redress against anyone who deprives him of it or, by improperly obtaining a copy, endeavors to realize a profit by its publication, cannot be doubted."[1] Ownership, therefore, is independent of any statute either of a state or of the United States. This common law right of a literary man to the product of his labor is enforceable in the Federal courts under authority of the Act of July 1, 1909.[2]

The Copyright Law, which secures and regulates an author's exclusive right in all of his publications, secures for him rights which are different from the rights of ownership and control that exist under common law prior to publication and copyright; it does not annul or limit the right of the author or proprietor of an unpublished work, at common law or in equity, to prevent the copying, publication, or use of such unpublished work without his consent, and to obtain damages therefor.[3]

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[1] Hugh K. Wagner, *Damages, Profits, and Accounting in Patent, Copyright, Trademark, and Unfair Competition Cases* (Thomas Law Book Co., St. Louis, 1926), p. 111; *Wheaton v. Peters,* 33 U.S. (8 pet.), 591, 657, 8 L. Ed., 1055, 1079 (1834).

[2] See Wagner, *op. cit.,* pp. 111-112. Very few cases have arisen under the common law; most claims for protection have been made under the Copyright Law.

Despite the absoluteness and apparent rigidity of the Copyright Law which is designed to protect the author in his rights, common practice and interpretation of the law indicate that in its application it is not as rigid as might appear. There is a twilight zone of accepted practice which involves good taste even though, literally, some of it doubtless contravenes the law. Authors do not take their cases to court, ordinarily, when the practices fall within these limits of good taste, although, according to the terms of the law, they might have legal grounds for such action. The conventional practices within this twilight zone raise many questions of a practical nature in which the answers given are in some degree of doubtful validity. These answers are derived from an examination of the common practices which leading scholars consider within the bounds of good taste despite the fact that these bounds in some instances may not be identical with the limits prescribed by statute law. In the ordinary course of events a writer may consider his practices scholarly and safe enough if he conforms to these accepted practices, although he must recognize that absolute safety lies only in conforming strictly to the law. It is his duty to understand as clearly as possible the limits within which he is working.

Henry Goudy defined plagiarism as the wrongful appropriation or purloining and publication as one's own of the ideas or expression of the ideas (literary, artistic, etc.) of another.[4] "In its modern sense," he says, "plagiarism cannot be said to be a crime punishable either by English or Scottish law, or, so far as I am aware, by any European code. Whether it should be made a crime may be a question. Under the Copyright Acts a man acquires a distinct property in his published writings, and for another man to appropriate these as his own, *lucri faciendi causa,* is very much of the nature of theft. Probably, however, the difficulties of proof that would arise in many cases—especially the difficulty of distinguishing between reasonable and justifiable borrowing and wrongful appropriaion—would render the inclusion of plagiarism in a criminal code impracticable. But though not a crime it is an offence in morals universally reprobated." [5]

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[3] Wagner, *op. cit.*, Chaps. I, X, XI; *Press Publishing Co. v. Monroe*, 73 Fed. 196, 199, 19 C.C.A. 429, 51 L.R.A. 353, 38 U.S. App. 410 (1896); *The Copyright Law of the United States of America*, as amended to and including May 23, 1928, Copyright Office Bulletin No. 14 (United States Government Printing Office, Washington, D. C., 1928), Sec. 2, p. 9. Hereafter cited as *The Copyright Law, as Amended (1928).*

[4] Henry Goudy, "Plagiarism A Fine Art," *Juridical Review* (1909), Vol. XX, No. 3, p. 302. This definition is the same as the one given by the *Oxford Dictionary*. Any one interested in a famous case of plagiarism by a man reputed to be a scholar will be repaid for reading this concrete case as set forth by Goudy. Here one will find presented quite clearly the scholar's concept of plagiarism illustrated in unmistakable terms. See also H. M. Paull, *Literary Ethics* (E. P. Dutton and Co., Inc., New York, 1929), Pt. I, but especially Chap. IX.

Goudy seems to believe that it is permissible to borrow statements from others provided acknowledgment is made. In one place he says, "There are common materials which all may use. But where the words of a writer are borrowed, especially of a writer whose copyright has not expired, it is universally expected and but common honesty, to acknowledge the source." [6] One may add that acknowledgment should be made even though the copyright has expired or even though there be no copyright as in the case of our government documents.

Just how far a careful writer may go in this direction without the consent of an author, even though he make full acknowledgment, is an unsettled question. It seems that one may quote a few paragraphs, but certainly he may not take a chapter from another writer without the permission of that writer or his publisher, depending upon who holds the copyright. Any author or publisher is justified in seeking protection under the Copyright Law in the case of such large borrowings without permission. Legally a writer (or publisher) might seek such a protection for a few pages or less of his work although in actual practice this rarely is done. Most writers are willing to have parts of their works quoted without express permission being asked, provided the indebtedness is acknowledged; indeed some, doubtless, feel flattered. They recognize that they are not injured, but perhaps benefited. However, when a writer appropriates substantial amounts of another's work and uses it as a source of income, and it is quite clear that its use may not redound to the benefit of the original author, then express permission for such use should be secured. Between these two extremes there is a zone of doubt that is governed by good taste. The careful writer will be zealous in protecting the interests of his fellow authors, will ask for permission to use materials when in doubt, and will always give proper acknowledgment.

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[5] *Op. cit.*, pp. 302-303.
[6] *Ibid.*, p. 314.

Plagiarism may be an art, but the guilty ones usually are detected without difficulty. The most common methods are illustrated amply by Goudy. It is unfortunate that so many of our writers today are resorting to these same devious methods, some of which could hardly be dignified as an art. One of the worst violations of scholarly procedure is found in books of "Readings" in which entire chapters, in rare instances fortunately, are taken without the author's express permission. Another is found in the practice of using the materials of an author, then citing his references as sources without mentioning the author from which the sources were borrowed. Any author's sources should be used, but if material is borrowed from that author he should be cited also. This is one of the most common practices of the immature and unscholarly worker who is conscious of his bad method but seeks to hide it by such unscholarly and devious methods. Indeed, the practice has become so common that certain publishing houses have seen fit to "plant" certain irregularities in references so that the dishonest borrower may be detected easily. The knowledge of this practice on the part of publishers and authors may deter some of the less honest workmen.

Some confusion and a considerable amount of bad practice exist as a result of adhering to the general philosophy that plagiarism is avoided if the borrower makes an intelligent use of another's material. The idea seems to imply that if a thorough digestion of the "stolen" material has been made it becomes truly a part of one's self. Digestion is a matter of degree; hence the confusion. This idea hardly meets the problem of the research worker who is attempting to assimilate a great mass of material while working under great pressure. Mr. E. F. Benson stated this unreliable principle when he said that ". . . the essence and so the artistic crime of plagiarism lies, it would seem, not in the fact of appropriating what others have said or indicated, but in the manner in which the appropriation is made. In a word and without paradox, the truth seems to be that unintelligent theft is plagiarism, critical theft is not inconsistent with the truest originality. . . . The question thus narrows itself down to the inquiry as to what constitutes unintelligent theft. . . . Unintelligent theft is theft which does not see and show in the material stolen a higher possibility for its use than that in which it was previously employed. To fail in this is to be convicted of plagiarism. Uncut diamonds, artistically speaking, may be legitimately taken away from their idiot-possessor, provided the thief will well and truly cut them, thus giving them a new brilliance. This is not a theft, properly speaking: rather it is a duty. It is good that diamonds should be stolen, be they yours, ours, or another's, provided only—this is essential—that the new possessor exhibits them to better advantage." [7]

Few if any scholars, doubtless, would agree with Benson. A sure and simple rule to follow is to give credit to the true author for every important fact or inference borrowed consciously. It is not difficult for the honest workman to distinguish the ideas gleaned consciously from others from the general body of information which he possesses as a result of past experiences. In doing research work it is quite easy to note down at once the sources of the facts gathered. Credit is given then to whom credit is due. Such a method, of course, results in numerous references, but the method is simple, sound, honest, and scholarly. It is those persons who wish to avoid references who experience difficulty and are harassed with the problem of plagiarism.

A writer may copy another's style consciously or unconsciously. Here again the careful worker and writer will know whether he has consciously imitated or not. This type of plagiarism, while more subtle, probably presents few serious problems. Most writers doubtless are influenced to some degree by the style of a favorite author. The influence may have been felt over a period of years and may have become a part of the writer's style. It is absurd to call him a style-stealer. To steal a style is not easy. Benson put it well in writing of Stevenson's style: "This decade has seen, if not the rise, at any rate the best work of one of the most distinctive masters of style (Stevenson), that holds, arrests, and claims imitation. The hall-mark of originality is on every sentence, yet, as we know from the author, and as the internal evidence of every line he wrote bears out, he formed his style laboriously, playing, as he says, 'the sedulous ape' to all the great masters of English." [8] He continues: "Must all aspiring scribblers attempt to put out of their minds, the moment they lay faltering pen to paper, all the bygone might aid by which alone they are scribblers at all? It is like telling a child to forget all its grammar has taught it when the moment has come for writing its French exercise. . . ." [9] With this much of Benson we may agree safely.

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[7] E. F. Benson, "Plagiarism," *The Nineteenth Century* (December, 1899), Vol. 46, pp. 976-978.

The growth of copyright legislation in the United States

According to Thorvald Solberg, the beginnings of copyright legislation in the United States were due to the personal endeavors of Dr. Noah Webster.[10] He was responsible for securing the enactment of our earliest copyright statute, passed by the General Court of Connecticut in 1783. About 1782 Webster and his friend Joel Barlow also presented a memorial to Congress petitioning it to recommend to the States the enactment of copyright laws. The resolution was passed in 1783. Massachusetts, Maryland, New Jersey, New Hampshire, and Rhode Island passed copyright laws in 1783; Pennsylvania and South Carolina in 1784; Virginia and North Carolina in 1785; Georgia and New York, 1786. Delaware alone of the original States which adopted copyright laws prior to the adoption of the Federal Constitution, failed to enact a copyright law.[11]

According to Solberg, Webster was responsible to a large extent in securing not only the copyright laws of these twelve States, but the Federal Copyright Law of May 31, 1790, which of course superseded and rendered unnecessary any State laws. After 1790 a great number of supplementary acts were passed, probably not less than twenty-five in all. The present Copyright Act which controls is that of March 4, 1909, effective July 1, 1909, as amended in 1912, 1913, 1914, 1926, and 1928.[12] While Webster favored a perpetual copyright, the Act of 1790 provided for copyright running fourteen years. The Act of 1831 made it twenty-eight years with a right of renewal running fourteen years. The present Act provides for a copyright of twenty-eight years with a renewal for the same period. All of the Acts prior to 1891 restricted the protection to citizens of the United States, the Acts of 1790, 1831, 1870, and the *Revised Statutes* of 1878 being very explicit in the matter. Since 1891 there have been slight concessions but of small importance. In 1905, for example, provision was made for an *ad interim* copyright running for one year applicable to books printed in a foreign language, in order to enable the alien author to decide whether it would pay him to reprint his work in the United States and thus secure permanent copyright. As a result of limiting the protection to citizens of the United States (and to aliens, under certain conditions, when domiciled in the United States), *piracy* of foreign works has been common in this country. The Acts of 1790 and 1831 contained provisions that nothing should be construed to prohibit the importation, vending, reprinting or publishing of works by authors not citizens or residents of the United States.

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[8] *Op. cit.*, pp. 978-979.

[9] *Ibid.*, pp. 980-981.

[10] See Thorvald Solberg, "Copyright Law Reform," *Yale Law Journal* (Nov., 1925), Vol. XXXV, No. 1, pp. 48-50. The remainder of his article, pp. 50-75, is devoted to a discussion of the present status of copyright, both national and international.

[11] Solberg, *op. cit.*, pp. 48-49.

The Constitutional basis for national copyright legislation is Article I, Section 8, "The Congress shall have power . . . to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

The United States Copyright Law

The present Act is entitled "An Act to Amend and Consolidate the Acts Respecting Copyright." [13] The law of copyright protects authors, publishers, artists, and others responsible for their respective publications. It preserves their rights and provides redress for infringement. No person can print or publish a copyrighted book or other copyrighted article without the permission or sanction of the proprietor of the copyright. A "book" as defined under the copyright law may be only a single sheet, as in a musical composition. Infringement of a copyright may be estopped by a court injunction, and damages are recoverable from those who illegally print a book which is copyrighted. Yet, according to Albert Highton, writers or editors may select ideas or thoughts from copyrighted books, change the original wording, and express the same thoughts in their own language, or otherwise alter the presentation of the original text or subject matter without being considered as coming under the ban of infringing the copyright law.[14] While Highton's view may be correct, the scholar will always acknowledge the source of his ideas when he recognizes clearly that they are borrowed.

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[12] 35 *Statutes at Large*, Pt. 1, pp. 1075-1088; 37 *Statutes at Large*, Pt. 1, pp. 488-490, 724-725; 38 *Statutes at Large*, Pt. 1, p. 311; 41 *Statutes at Large*, Pt. 1, pp. 368-369; 44 *Statutes at Large*, Pt. 2, p. 818; and *The Copyright Law, as Amended (1928)*.

[13] A standard authority on this subject is Arthur W. Weil, *American Copyright Law* (Callaghan and Co., Chicago, 1917). See also Edward S. Rogers, "The Subject Matter of Copyright," *The University of Pennsylvania Law Review* (1919-1920), Vol. 68, pp. 215-232, for a technical discussion of what constitutes a writing, an author, and the promotion of the progress of science

The following classification of works may be copyrighted although this classification does not limit the subject matter of copyright. An applicant for registration of any work is required to specify distinctly the class to which the copyright belongs.

(a) Books, including composite and cyclopedic works, directories, gazetteers, and other compilations
(b) Periodicals, including newspapers
(c) Lectures, sermons, addresses (prepared for oral delivery)
(d) Dramatic or dramatico-musical compositions
(e) Musical compositions
(f) Maps
(g) Works of art; models or designs for works of art
(h) Reproductions of a work of art
(i) Drawings or plastic works of a scientific or technical character
(j) Photographs
(k) Prints and pictorial illustrations

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as implied by the Constitution and the Act. See especially *The Copyright Law, as Amended (1928).*

[14] Albert H. Highton, *Practical Proofreading* (United Typothetae of America, Chicago, 1926), p. 185.

(l) Motion-picture photoplays

(m) Motion pictures other than photoplays

Compilations, abridgments, adaptations, arrangements, dramatizations, and translations are subject to copyright with the consent of the proprietors of such works and this does not affect any subsisting copyright upon the matter employed or any part thereof. Publications of the United States government are not subject to copyright, and government publication of copyrighted material does not affect the subsisting copyright.

New editions require new copyrights, but they cover only the new material and the manner of combining the new with the old material. Legally the old material may be copied at the expiration of the original copyright. In composite works the copyright covers the work in its entirety, the editor thus representing all proprietors in taking out the general copyright. A proprietor of composite works can only copyright such works as an entirety, if he has shown selection and arrangement in assembling the whole, except as to those parts of which he is the author or proprietor, which he can, of course, copyright for other reasons. In either event, one copyright by him will copyright everything he can copyright.[15]

The powers of the Copyright Office are limited. There is nothing in the Copyright Act providing for any machinery similar to that existing in the Patent Office for a preliminary official examination of works seeking copyright. The authority given to the officers charged with the administrative aspects of the Copyright Act is of the most meager description. In brief, they are to act as registrars and depositories of works in which copyright is claimed. The sole apparent discretion confided to such officers is, possibly, in connection with renewals of copyrights and in the authority to make rules and regulations for the registration of claims to copyright, as provided by this Act. Pursuant to this authority, *Rules and Regulations for the Registration of Claims to Copyright* have been issued in the form of a Copyright Bulletin.[16]

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[15] Weil, *op. cit.*, pp. 177-180; *The Copyright Law, as Amended (1928)*, Secs. 3 and 6, pp. 9-10.

[16] Anyone interested in copyrighting his own work may secure *Copyright Bulletin No. 15* from the Register of Copyrights, Washington, D. C. See

Most persons prefer to leave all questions of copyright in the hands of their publisher. There is probably little to be gained by the individual who copyrights his own work except trouble. In rare instances when a publishing house becomes bankrupt, for example, it may sell its copyrights very cheaply and unless the author purchases his copyright his rights may be damaged seriously. In such instances, of course, it is advantageous for him to own the copyright. If the copyright is violated it is better to let a large publishing house fight the infringement than for the individual to do it. In any case the sole right to publish is held by the publisher during the term of his contract with the author, and if, at the termination of the contract between author and publisher, the copyright has not elapsed, the rights revert to the author and become his exclusive property. After the legal term of the copyright has elapsed—twenty-eight years, with right of renewal for the same period—all rights granted to the author or publisher revert to the public. Some contracts between publishers and authors terminate only with the expiration of the copyright; others terminate at any time agreed upon. The ownership or temporary copyright is governed by the terms of the author's contract with the publisher and is not determined by the legal notice of copyright which is printed on the back of the title-page.[17]

The procedure of copyright is very simple and informal. The Register of Copyrights issues *Rules and Regulations for the Registration of Claims to Copyright* (Copyright Office Bulletin, No. 15) which serves as a guide. The notice of copyright appears in the book when it comes from the press and before it actually is copyrighted. This is necessary because of the procedure involved. Copyright is secured upon publication, with the notice of copyright already printed in the book, by depositing two copies of the published work with the Copyright Office at Washington, D.C., or, if the work is by an author who is a citizen or subject of a foreign state or nation and has been published in a foreign country, one complete copy of the best edition then published in

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also Weil, *op. cit.*, for Copyright Office Rules, Rules and Forms, Regulations Governing Importations, Copyright Conventions, and Copyright Laws of Other Countries.

[17] See W. S. Booth, *A Practical Guide for Authors in their Relations with Publishers and Printers* (Houghton Mifflin and Co., Boston, 1907), *passim.*

such foreign country is required. This office enters the copyright in the name of the author or publisher, as the case may be, and issues a certificate of registration under the seal of the Copyright Office. The copies then are deposited in the Congressional Library at Washington. When the books are sent to the Register of Copyrights they must be accompanied by the claim of copyright as well as an affidavit showing that the work was printed, published, and bound in this country in compliance with the law. If the notice of copyright is not published in the book or periodical, damages cannot be collected in case of infringement.

If the work is not published or is not for sale, the copyright may be secured by the deposit of one complete copy of the work along with the claim of copyright. Only one copy is required when the work is a contribution to a periodical. Periodicals, like books, must be produced and bound in the United States.

Copyrights are given to citizens or subjects of foreign States only when the alien is domiciled within the United States at the time of the first publication of his work, or when the State or nation to which the citizen or subject belongs has entered into a reciprocal agreement with the United States. To be exact it is done ". . . when the foreign State, or nation of which such author or proprietor is a citizen or subject, grants either by treaty, convention, agreement, or law, to citizens of the United States the benefit of the copyright on substantially the same basis as to its own citizens, or copyright protection substantially equal to the protection secured to such foreign author under this Act or by treaty; or when such foreign State or nation is a party to an international agreement which provides for reciprocity in the granting of copyright, by the terms of which agreement the United States may, at its pleasure, become a party thereto."[18]

The existence of the reciprocal conditions is determined by the President of the United States who issues proclamations from time to time. In 1910, for example, President Taft issued a proclamation indicating the countries included under the reciprocal agreements as stipulated in our Copyright Law. These were: Austria, Belgium, Chile, Costa Rica, Cuba, Denmark, France, Germany, Great Britain and her possessions, Italy, Mexico, the

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[18] *The Copyright Law, as Amended (1928)*; Weil, *op. cit.*, pp. 618-619.

Netherlands and her possessions, Norway, Portugal, Spain, and Switzerland.[19] These reciprocal arrangements are due to the fact that the United States has refused to join the International Copyright Union. The position of the United States with respect to that Union is analogous to its position with respect to the League of Nations. The facts will be reviewed below.

The Copyright Law of the United States prohibits the importation of any piratical copies of a book on which the United States copyright is still running.[20] If an author wishes to prevent piracy in any foreign country, he should direct his publishers to see that his work is copyrighted in some foreign country, for example in Great Britain, which is a member of the International Copyright Union since this secures protection in all countries which are parties to the Union. If the United States were a member of the International Copyright Union the copyrighted work would be copyrighted automatically in every country which is a signatory. Under present conditions protection can be secured in other countries only through copyright in one of them. If the book is likely to sell in great numbers the American publisher will attend to the British copyright through his agent or through his London house if he has one.

Copyrights in the United States may be transferred, assigned, mortgaged, or bequeathed by will by complying with registration requirements and by payment of the proper fees. All copyright fees are listed in the law. The fee for copyrighting a book, for example, is two dollars; the fee for renewal, one dollar.[21] The Register of Copyrights makes an annual report to the Librarian of Congress and this is printed in the annual report of the Library of Congress. He prints periodically catalogs of articles deposited and registered for copyright.

The damages which may be collected for infringement of copyright are specified in the law. Rules and regulations for practice and procedure under the law are prescribed by the Supreme

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[19] For additional and later proclamations, see *The Copyright Law, as Amended (1928).*

[20] There are certain minor exceptions to this provision. See *The Copyright Law, as Amended (1928)*, or Weil, *op. cit.*, p. 603.

[21] Remittances should be made by money order payable to the Register of Copyrights. His office supplies application and affidavit forms on request.

Court of the United States. No criminal proceeding can be maintained unless commenced within three years after the cause of action arose.[22]

The International Copyright Union

Prior to 1882 numerous treaties for the international protection of authors had been entered into between the different European countries, but these were always between two countries; no general or multilateral treaty was made. The United States up to this time had not entered into any treaty, although during and after 1839 unsuccessful efforts were made to secure a treaty with Great Britain which would give reciprocal copyright protection.[23] According to Mr. Solberg, the idea of replacing the great number of separate copyright treaties in force between the different European countries by one general international copyright convention originated with the International Literary and Artistic Association founded in 1878 at Paris under the presidency of Victor Hugo. As a result of a meeting of this association in Rome in 1882, steps were taken to secure an international conference composed of representatives of interested bodies for the purpose of creating an International Copyright Union. The conference took place at Berne, Switzerland, in September, 1883, and formulated a convention. The final draft was agreed upon at a second meeting at Berne in 1884 and submitted to the various countries for consideration and for return with comment and criticism at the conference to be held in 1885. The final conference for the purpose of signing was held at Berne in 1886 to which twelve countries sent delegates, all signing except Japan and the United States. Other countries which did not participate or sign were Russia, China, Austria-Hungary, and certain of the South American Republics which have their own convention.[24] The signed convention became effective September 5, 1887, and is known as the Berne Convention.[25] President Cleveland in his annual message of December 6, 1886, stated as an excuse for the non-participation of the United States the following which has a peculiarly modern tone: "Inasmuch as the Constitution gives to the Congress the power 'to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries,' this government did not feel warranted in becoming a signatory pending the action of Congress upon measures of international copyright now before it; but the right of adhesion to the Berne Convention hereafter has been reserved."[26]

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[22] See *The Copyright Law, as Amended (1928)*, Secs. 25-28, or Weil, *op. cit.*, pp. 613-616.

[23] Thorvald Solberg, "The International Copyright Union," *Yale Law Journal* (Nov., 1926), Vol. 36, No. 1, pp. 68-112. This is an excellent study of the history and development of the Union. See also his article, "Copyright Law Reform," *Yale Law Review* (Nov., 1925), Vol. 35, pp. 58-68.

[24] A list of signatories is given by Solberg, "The International Copyright Union," p. 88.

The United States was debarred and still is debarred from signing the Convention by their insistence upon local manufacture as a condition of copyright. The elimination of this manufacturing requirement is necessary before they will be permitted to enter the Union. According to Solberg, it is understood, however, that if these requirements are confined to authors who are citizens or residents of the United States, the Articles of the Convention will not prohibit the entry.[27] This Convention covered approximately 935 million people.

The Berne Convention has undergone certain revisions, one in Paris in 1896, and one in Berlin in 1908. The Berlin Convention, signed by twenty-nine countries, has been the one in force until amended at the recent Convention held in Rome in May-June, 1928, which resulted in thirty nations signing (June 2) the new copyright law (followed by others later) which were to be submitted to the respective governments of each country for ratification.[28] This new law will form the basis of copyright legislation in countries belonging to the International

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[25] The Berne Convention is given in detail in Weil, *op. cit.*, pp. 794-827.

[26] Solberg, "The International Copyright Union," p. 67.

[27] *Ibid.*, p. 71.

[28] *The New York Times* (May 13 and June 3, 1928). For the text, see "Convention Creating an International Union for the Protection of Literary and Artistic Works, Signed at Berlin, November 13, 1908; Revised, and Signed at Rome, June 2, 1928." *Information Circular No. 4, C* (United States Government Printing Office, Washington, D. C., 1928); the *Annual Report of the Register of Copyrights for Fiscal Year Ending June 30, 1928* (United States Government Printing Office, Washington, D. C., 1928), pp. 14-20; and the *United States Daily* (Sept. 29 and Oct. 1 and 2, 1928).

Copyright Union. The United States was represented at the last convention along with fifty-two others and several enabling bills have been introduced in Congress in an effort to secure full participation by the United States. The United States is the only important country not a member of the Union, now composed of about forty members, and it is becoming increasingly difficult to maintain our isolation due to the pressure from authors, librarians, musicians, artists, and motion-picture producers whose products since the World War are being used freely abroad. Also as a result of a provision of the United States Copyright Law which requires that works in the English language shall be remanufactured in the United States before they can be copyrighted here, Canada recently passed a licensing law that gives the Dominion Government power to require a similar remanufacture in Canada for United States works, thus hampering the free dissemination of American books and periodicals north of the border.[29] However there are no definite indications that the United States will join.[30]

According to the Berlin Convention, as modified by the Rome Convention, an author of any one of the countries of the Union, who publishes for the first time in any one of those countries, secures copyright thereby in all the other signatory countries automatically and without any formalities whatever. This general protection is independent of the existence of copyright of the author's work in his own country. Such protection, therefore, makes the authors of the signatory countries citizens of the entire Union, so far as copyright is concerned. Even an author who is outside of the jurisdiction of any of the countries of the Union, by the mere act of having first published his works in one of those countries, may enjoy there the same rights as national authors, and in the other countries of the Union the rights accorded by the Convention. "Thus, for example, an American author who first publishes his work in one of the countries of the Union, secures thereby copyright protection automatically in all the countries of the Union, without the necessity of compliance with any formalities whatever, and irrespective of whether he has or has not secured copyright for his work in the United States."[31]

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[29] Carl L. Cannon, "Copyright Codes Up For Revision," *The New York Times* (May 13, 1928).

[30] See *The New York Times* (July 7, 1928), p. 12.

The name of the author alone is sufficient proof of authorship and in the case of anonymous or pseudonymous works, the name of the publisher is considered sufficient proof of his right to protect the right of the author to permit procedure against infringement. All infringing copies made in any country where the original is protected legally may be seized as well as unauthorized reproductions coming into that country from another where the work has not been protected, or where the copyright has expired.

The Rome Convention secures to authors during the whole term of the copyright in the original work the exclusive right to make or to authorize any translation of it. The term of copyright is for the life of the author and fifty years after his death unless this term is not adopted uniformly by all countries of the Union, in which case the duration of the protection is regulated by the law of the country where protection is claimed, but this may not exceed the term granted in the country of the origin of the work. If published simultaneously in several countries the length of the copyright is determined by the unionist country granting the shortest protection.[32] The Berlin and Rome Conventions also apply to all works which have not fallen into the public domain of their country of origin at the time they became effective.[33]

The Bureau of the International Union for the Protection of Literary and Artistic Works

This Bureau is located in Berne, Switzerland, and was organized in 1888. The statute giving rise to the Bureau grew out of the Berne Convention of 1886. Located at the same place and associated with it is the International Bureau of Industrial Property which owes its origin to the Convention of Paris in 1883, (revised at Brussels, 1900, and at Washington, D. C., 1911), for the Protection of Industrial Property.[34] The Swiss Federal Council is the supervising authority in charge of both Bureaus. The organization of the International Office was determined by regulations drawn up by the Government of the Swiss Confederation. There is a Director of the International Office who collects and publishes in the French language information valuable to the members of the Union. He makes an annual report on his administration, which is communicated to all the members of the Union. The chief activities of the Bureaus are listed as follows: Official documentation; archives, information, inquiries on subjects of common utility, preparation of conferences, statistics, bibliography; monthly publications—*La Propriété industrielle, Les Marques internationales, Le Droit d'auteur,* other publications being general collections of laws and treaties; acts of conferences; comparative and synoptic tables (comparative law in regard to patents for inventions, drawings and industrial models, and trade-marks); and a list of resolutions passed by the various congresses and assemblies in regard to industrial, literary, and artistic property. These documents are applicable to both unions.[35]

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[31] Solberg, "The International Copyright Union," p. 86; *United States Daily* (Oct. 1 and 2, 1928).

[32] See also Stanley Unwin, *The Truth About Publishing* (George Allen and Unwin, Ltd., London, 1926), pp. 276 *ff*.

[33] See Solberg, "The International Copyright Union," pp. 85-87, and *United States Daily* (Oct. 1 and 2, 1929). Mr. Solberg, Chief of the Copyright Office in the Library of Congress, represented the United States at both the Berlin and the Rome Conferences.

The duty of the Literary Bureau, sometimes called the Literary Union, is to insure to authors effective protection against counterfeiting, reproduction, translation, adaptation, representation or unauthorized exhibition of literary, musical or photographic work. All expenses of the Bureau are shared by the contracting states.

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[34] The object of the Industrial Union is to facilitate the protection of rights in inventions, drawings and industrial models, trade-marks, and things against usurpation, imitation, or unfair competition. There are also some limited unions: (1) The agreement of Madrid of 1891 regarding international registration of trade-marks, twenty countries adhering; (2) the agreement of Madrid of 1891 regarding the suppression of false indications of origin, eleven countries adhering; (3) the agreement of Berne of 1920 regarding the maintenance or reestablishment of rights in industrial property affected by the World War, twenty countries and three British Colonies adhering. See *Handbook of International Organisations* (League of Nations, Geneva, 1926). The Diplomatic Conference held in Rome in May-June, 1928, was followed by a meeting of the International Association for the Protection of Industrial Property, which is unofficial, but whose members are interested in the copyright question. See Carl L. Cannon, *op. cit.*

At a plenary session of the Pan American Trade Mark Conference held in Washington, D. C., Feb. 19, 1929, a Convention providing for the protection of trade-marks was adopted by the Pan American States. A protocol providing for the establishment of an Inter-American Trade Mark Bureau also was adopted. See *United States Daily* (Feb. 13, 14, 18 and 20, 1929).

[35] *Handbook of International Organisations*, pp. 169-170.

Attitude of the United States toward international cooperation in copyright[36]

The fundamental reason lying back of the attitude of the United States was stated in 1883 by Secretary of State Frelinghuysen. He said, in part: "The difference of tariffs of the several countries, and the fact that many other industries besides that of the author or artist are concerned in the production and reproduction of a book or work of art, must be borne in mind when considering any plan by which the originator of the work is to be vested with the right to produce or to prohibit its production in all other countries."[37] Since that time it is difficult to point to any marked change in the attitude of our government toward the International Copyright Union, although various bills have been introduced recently in Congress proposing entry into the Union.[38]

Piracy

In the United States the general Copyright Acts of 1790, 1831, 1870, and the *Revised Statutes* of 1878 invited piracy and soon it became notorious for its piratical practices. As early as 1837 Henry Clay presented an address, signed by fifty-six distinguished British authors, to Congress as a protest against the practice of the United States. Clay, a member of the Senate committee considering the question, introduced a bill repeatedly in an effort to extend our copyright protection to British and French authors since our authors were protected by them. These efforts came to nothing. Agitation, led by leading literary men of the day, resulted in the later introduction of some similar bills, but they were opposed by certain publishers, typographical unions, and legislators, and were defeated.

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[36] See Thorvald Solberg, "The International Copyright Union," *Yale Law Journal* (Nov., 1926), Vol. 36, No. 1, pp. 88-110, to whom the author is indebted for this information. Mr. Solberg has traced in some detail the history of the attitude of the United States on this question since 1883.

[37] Solberg, *op. cit.*, p. 89.

[38] The Perkins Bill (H.R. 5841) was introduced in the House, Jan. 2, 1925, and again on Dec. 17, 1925; the Vestal Bill (H.R. 10434) on March 17, 1926; and the Ernst Bill (S. 4355) in the Senate on February 20, 1925. The Perkins Bill provides for the elimination of the notorious manufacturing provisions which exclude the United States from the International Copyright Union as well as the affidavit of American manufacture and other needless formalities. The Vestal Bill retained the manufacturing provision as affecting domestic authors. For a discussion of these bills, see Solberg, *op. cit.*, pp. 100-102, and the *Annual Report of the Register of Copyrights For the Fiscal Year Ending June 30, 1928*, p. 20. In 1928 three Vestal bills were introduced in the Senate to authorize the President of the United States to effect and proclaim the adhesion of the United States to the Convention for the protection of works of literature and art signed at Rome on June 2, 1928. See H.R. 8912 (January 9), H.R. 9586 (January 18), and H.R. 15086 (December 10).

It was not till March 3, 1891, that an act was passed extending any protection to alien authors. This act, known as the "Chace" Copyright Act of March 3, 1891, and effective July 1, 1891, amended the existing law by dropping the words which limited the exclusive rights accorded to authors of copyright works to "any citizen of the United States or resident therein." Thus a foreign author might secure its protection of his rights, provided he were a citizen or subject of a foreign state or nation which permitted to citizens of the United States the benefit of copyright on substantially the same basis as to its own citizens. The Act of 1891 also provided specifically that no person should be entitled to a copyright unless he (1) filed a printed copy of the title of his book or a description of a work of art, or (2) deposited two copies of the book or other work, in the Library of Congress. The Act also provided that in the case of a book, photograph, chromo, or lithograph, the two copies of the same required to be delivered or deposited should be printed from type set within the limits of the United States, or from plates made therefrom, or from negatives, or drawings on stone made within the limits of the United States, or from transfers made therefrom. Any importation into the United States or any article not so made was prohibited. These latter provisions secured the support of our typographical organizations but prevented the United States from becoming a member of the International Copyright Union.[39]

Leading literary men and some publishers have opposed rather uniformly this manufacturing clause. Henry Van Dyke, for example, said of it: "The sin . . . lies in the stupefying fact that ours is the only civilized Christian country on the globe which deliberately and persistently denies to foreigners the same justice which it secures to its own citizens, and declares that the intellectual property of an alien shall be forfeited and confiscated the moment it touches our shore or crosses our border. This nation says to the German, the Frenchman, the Englishman, 'You have written a book. We want it, and we propose to take it. You have no rights that we are bound to respect. We shall reprint your work, and mutilate it and sell it, and do as we like with it, and you shall never receive a penny for it.' "[40]

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[39] See Solberg, "Copyright Law Reform," pp. 57-58.

The well-grounded contentions of Dr. Van Dyke may be summarized briefly as follows: He insisted that our position was (and is) such that we look upon the foreigner as an enemy, a theory belonging to the heathen world. Piracy becomes honorable, and a foreigner is a foe who deserves and receives no protection and no mercy. It means class discrimination, for while a foreign inventor is protected by patents and the foreign traveler here by police protection, the property of the foreign writer is brought over here for the express purpose of being stolen. It means that our intellectual class is compelled to compete, not with underpaid labor, but with labor not paid at all. We see, he insisted, the results in the pirating of cheap and pernicious literature offered for sale; it would be a gain, he thought, if those books were made to cost more. It penalizes the intellectual workers since they are not given the same protection given to other laborers. It inflicts upon us the weakening and degeneration of the popular conscience; our country professes to be founded upon justice, upon the desire to secure to every man his "natural" rights, and yet it refuses to recognize the rights of intellectual property within its borders, if the owner is a citizen of another country.[41]

The requirements relative to the manufacturng of books in the United States were carried over into the Act of 1909 and are looked upon with extreme disfavor by competent authorities on the question. Copinger, in his work on the Law of Copyright, refers to these "notorious manufacturing provisions" and says: "It seems impossible to justify them either on moral or economic grounds. In fact the only reasons for their existence seem to be those of a political nature or based upon expediency. The granting of special privileges arising out of copyrights or inventions to any class of people except authors and inventors is against the spirit and purpose of our institutions and should be left out of our Copyright Statute. . . .

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[40] Henry Van Dyke, *The National Sin of Literary Piracy* (Charles Scribner's Sons, New York, 1888), pp. 14-15.

For a fuller discussion of piracy, see Paull, *op. cit.* Chaps. IV-VIII.

[41] Van Dyke, *op. cit., passim.* These arguments advanced by Dr. Van Dyke may be considered typical of those advanced by the opponents of our Copyright Law.

"It would seem, all things considered, that if protection must be accorded American printers, it should be granted under a tariff upon importations of foreign-made books and not made part of the existing Copyright Law . . ."[42]

The reasons why the United States should be a member of the International Copyright Union were set forth admirably by Mr. Solberg as follows in 1925 and are equally valid today: "Our entry into the Union is demanded as an act of fairness upon our part toward other countries which are members. While the United States is not a member and is not pledged to accord to foreign authors the reciprocal protection implied, our authors may automatically secure protection for their works in all the countries of the Union by first or simultaneous publication of such works in a Union country, for example, England. In other words, we secure the great advantages of the Union through a back door. This is not to our credit. As a noted copyright authority justly says: 'It is not compatible with the dignity of a State to allow the international protection of its authors to depend on the unrequited generosity of foreign States.'"[43] He points out also that we would afford a greater market to the foreign writers and at the same time our public would be benefited by the increased diffusion of the best products of the intellectual and artistic productivity of Europe. With these views the author agrees.

The comments of an Englishman, Stanley Unwin, should be profitable to people in the United States.[44] He points out that British literary property, unless printed in the United States within the specified time, is at the mercy of anyone who cares to print it in the United States. While pointing out that no reputable publisher in the United States would engage in piracy, there are others who make a practice of pirating English books. Although there is no legal protection for the English books, Mr. Unwin gives an account of the many indirect methods which have been used to bring such disreputable and recalcitrant publishers to terms. With the searchlight of publicity turned upon them and with all important business connections with them severed by leading businesses of various kinds they usually are brought to terms.[45]

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[42] F. E. Skone James, *Copinger on the Law of Copyright* (Sweet and Maxwell, Ltd., London, 1927), 6th ed., p. 344; also quoted by Solberg in "Copyright Law Reform," pp. 70-71, from W. A. Copinger, *The Law of Copyright* (Stevens and Haynes, London, 1915). See also Everett N. Curtis, *Special Report on the Matter of the Proposed Entry of the United States into the International Copyright Union* (The New York Patent Law Association, New York, March, 1925), pp. 10-11.

[43] Solberg, "Copyright Law Reform," pp. 70-71.

Proposals for the reform of the Copyright Law of 1909

Thorvald Solberg points out, among other proposals for reform, the following: (1) The requirement of American manufacture of copyright works should be abolished. (2) Certain formalities as a condition for securing copyright should be abrogated. These are: (a) insertion in copies of the work of any notice of the reservation of the copyright; (b) deposit of copies of the works in which copyright is claimed; and (c) obligatory registration of the copyright work or of a claim to copyright in such work.[46]

The first, the requirement of American manufacture of copyright works, excludes the United States from the International Copyright Union and should be removed from the law. As to the second, it is urged that such formalities as the publication *with notice of copyright* as a condition precedent to obtaining protection has nothing to defend it. Such a notice of copyright is not required generally in the copyright laws of foreign countries and has not existed in England for sometime. The principle of a general protection to authors without the requirement of any formalities throughout the countries of the civilized world appears to be approved by the best thinkers upon the subject. Since there is no general requirement of registration or of notice of ownership with reference to personal property, there seems to be no good reason for such a requirement being extended to literary property for "approaching the question from the standpoint of sound business morals, there does not appear to be any ethical reason why any person should use the original output of an author without compensating him for such work, provided there has been a substantial taking of the author's labors."[47] Any person appropriating this kind of property, the ownership of which is in question, does so at his peril, and there "is no fundamental reason why the work of an author should be any exception."[48]

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[44] Unwin, *op. cit.*, pp. 287-289.

[45] *Ibid.*

[46] Solberg, "Copyright Law Reform," p. 68.

Mr. Solberg also points out that the requirement of a deposit of copies in which copyright is claimed is a survival from ancient times when it was an aid to censorship or required in relation to special printer's "privilege" in times anterior to copyright, and that its chief use now is that of a "feeder" to government or other official libraries. In the majority of the great countries of the world and countries where the literary and artistic production is most advanced the formalities are fewest.[49]

Mr. Solberg contends also that the expense and trouble involved in registration are all out of proportion to the benefits received. These requirements were insisted upon as a condition precedent to maintaining actions or proceedings for infringement of the copyright. From July 1, 1897, when the present system of registration was instituted, to June 30, 1925, the registrations amounted to more than three and a quarter million entries and less than five hundred cases of dispute have arisen. The experience of the great countries of Europe which have abrogated copyright registration seems to support conclusively Mr. Solberg's contention.[50] Moreover, he says that hardly a week passes that does not bring to the Copyright Office evidence of the entire loss of copyright due to failure to comply exactly with the statutory formalities. The great injustice of such loss, he thinks, should be a sufficient argument in itself to support the proposal to abrogate the requirements of compulsory registration. In any event, he insists, registration should be optional; this not only would give a chance to try out his proposed reform but would present an opportunity for testing the real need for copyright registration.[51]

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[47] *Ibid.*, p. 73.

[48] *Ibid.*

[49] *Ibid.*

[50] See Solberg, "Copyright Law Reform," p. 74.

Mr. Carl L. Cannon, writing in *The New York Times*,[52] says: "All interests now appear to have united on a new form of copyright protection, that of so-called divisibility of copyright. This means that the author in assigning his rights of reproduction and sale may deal separately with the different commercial interests that may produce the work in different form. At present all rights are signed by the author in a lump. Under the proposed law, he may, for example, sell the book rights to one agent, the dramatic rights to another, translation rights to a third, moving picture rights to a fourth, &c.

"To bring United States copyright law into line with international practice, a number of other changes are being advocated by lawyers who find the divergence embarrassing in the settlement of disputes with foreign agents. Those international legal tangles are growing with the increasing importance of United States interests abroad. Among these changes are the abolition of the arbitrary distinction in the treatment of published and unpublished works; abrogation of formalities such as notice, registration and deposit of copies as conditions of copyright protection; the substitution of a single continuous term of protection based on the life of the author in place of the present system of first term and renewal; the abrogation of compulsory manufacturing in the United States for books in the English language.

"This last condition is now virtually conceded by the labor interests, who believe that there is less to gain by the maintenance of this provision than loss to be incurred through retaliatory measures by Canada. The present tendency of copyright legislation is toward simplification and the recognition of literary property as similar to all other kinds of property."

The author's relation to his publisher

Every author should endeavor to secure the best publisher possible for his manuscript and then the best contract possible with this publisher. This implies that the author will understand clearly the nature and value of his work and select a list of publishers who are interested in such material. From this group he makes his choice.

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[51] *Ibid.*

[52] (May 13, 1928.)

A logical first step for the beginner is to have a conference with an experienced friend who could appraise the nature of the work impartially and indicate the proper type of publisher to be approached. The next step would be to write the editor or publisher and ask for an appointment at which the manuscript may be presented.[53] Quite often a friend may have a direct contact with the publisher and will call it to the latter's attention. The publisher then will open the negotiations. This is preferable to writing directly to the publisher. Good publishers are always alert to secure good manuscripts on timely subjects; their representatives are watching for every clue which might lead to a manuscript, but these manuscripts ordinarily are those of the mature and experienced person. They prefer writers of experience and established reputation. The beginner's problem is more difficult. His best avenue of approach is through a mutual friend in whom the publisher has confidence. His next choice is to see the publisher or his representative directly. Articles for magazines usually are mailed directly to the magazine concerned for acceptance or return, if rejected. If the writer is unknown to the editor he should include a brief biographical note of himself in order to aid the editor in identifying him.

The beginner who leaves a book-manuscript with the publisher may expect it to be retained from two weeks to three months. The publisher wishes to submit it to various competent critics and sometimes he is unable to pass the work rapidly from one to the other. Competent critics usually are busy persons. Rejection may be for any number of reasons: The work may be considered unscholarly or, even though scholarly, perhaps not of timely interest, too expensive to print relative to anticipated returns, it may be antagonistic to interests that they do not wish to antagonize, or it may conflict or compete with books which the publisher already has on his list. The fact that the work is rejected is not a necessary indication of its undesirability; it is merely undesirable to that publisher. Other publishers may or may not wish to publish it. Only a trial will determine the fact. Most publishers are polite, and when forced to reject a manuscript will endeavor to cultivate a friend rather than make an enemy. Most of them have found it best not to criticize adversely or severely the rejected manuscripts; they usually report that while it may be and probably is an excellent piece of work it does not fit into their particular plans. It may be difficult to learn the true cause for rejection because most critics insist that the publishers protect them. Occasionally a publisher will deal quite openly and directly with the author if the latter has a disposition which would invite frankness without any risk of bitterness developing. It probably is safe to say that most publishers are exceedingly anxious to be helpful as well as considerate and the beginner should approach them with no other thought in mind. If his manuscript is rejected he should accept the rejection in the same spirit. Publishers want two things: good manuscripts and revenue. Not all good manuscripts bring revenue and publishers must consider the income. Some houses are so anxious to keep scholarly works among their publications that they frequently publish works which will yield no profit trusting that they will make up the loss on some more popular, even if less deserving, work. Certainly not much more than this, in justice, could be asked of them.

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[53] See John Farrar, "Dealing with Editors," in William Dorsey Kennedy (Ed.), *The Free-Lance Writer's Handbook* (The Writer Publishing Co., Cambridge, Mass., 1926), pp. 14-21.

Agreements and contracts between author and publisher

There is very little difference among the forms of agreement used by reputable publishers. The publisher usually assumes the cost of manufacturing, printing, and distribution, and offers the author a royalty on the retail selling price or on the gross proceeds, the percentage varying according to the type of book. Some publishers increase the rate occasionally while others maintain a flat rate without variation.

Usually a contract includes terms which require the author to bear a certain proportion of the cost for making corrections. On this point the author should have a clear understanding with the publisher, otherwise disappointment and disagreement may result. Ordinarily in contracts there is a stipulation that all charges for such "author's changes" over and above the amount of five or ten per cent of the cost of the regular composition shall be charged against the author. The trouble may arise from the fact that the author may find himself paying not for his own corrections but for corrections resulting from printing errors. If the author submits a perfect manuscript all errors will be printer's errors and the cost should not fall to the author. Some publishers keep no record which distinguishes the errors of the printer and of the author. The author should keep such a record which can be compiled from the galley proof. This tabulation will show him his proportion of the total and he should have a clear understanding with the publisher that he is to bear only his proportion of the total. The proofreader for the publisher will check many of the printer's errors in colored ink, the author makes additional corrections in pencil, but this is not an accurate indication of responsibility unless the proofreader for the printer corrects every printer's error, which is rarely the case.

Most contracts of this nature require the author to assign to the publisher the sole right to publish, to take out the copyright and renew it if desirable, to control the work in all languages, as well as all abridgments and selections. The author is compelled to guarantee the publisher that he is the sole owner of the work and that he will protect the publisher against all claims, suits, losses, or damage due to violation of property or copyrights or because of any libelous matter contained in the work. The author usually agrees to revise the manuscript whenever the publisher wishes to issue a new edition. If he refuses or is deceased, the publisher may have the work done by some one else and charge the cost of revision against the royalties due the author or his estate. Usually the agreements bind the author not to publish a competitive work without first submitting the new manuscript to the publisher. Ordinarily the latter reserves the right to publish the book in the form he prefers. If the author has any pronounced pride in the form which the publication will assume finally, he should have a definite agreement with the publisher as to his authority in the matter. While most publishers doubtless are very considerate of the author's preferences as to paper, type, binding, and other details, the wise author will not assign all his rights in the matter to the publisher. It is the common practice of publishers to grant the author a number of free copies of the finished work.

There are other types of agreements in which the author assumes part of the expense of publication and at the same time secures a higher royalty rate, for example, fifteen to thirty per cent. This type of contract may be offered to the author in cases where the publisher is doubtful of the salability of the book or when the expenses of publication are unusually high. While the author may profit by such a contract it is probably true that the publisher profits more. Some publishers, however, are using this type of contract to an increasing extent. They insist that it is but a fair test of the author's confidence in his own labors. While this may be true, it is a heavy burden to the author without available funds.

Some books are published on a commission basis in which the author pays the cost of manufacture and advertising, and the publisher accounts to him for the net amount of the sales after deducting his commission. The author should have a clear understanding of what his responsibilities are before signing such a dangerous agreement. Unless the books of the publisher are audited by an outside firm the author runs great risk of being defrauded through the manipulation of accounts.

Sometimes the author sells his work outright to the publisher, and this may be satisfactory if the author obtains a suitable price. This method is not common for books but is the usual one for almost every other kind of literary property.

Many variations appear in agreements regarding royalties although the range is not so very wide. Variations from the common ten per cent may assume any form. For example, the rate may be ten per cent on the first thousand, twelve and one-half on the second thousand, and fifteen per cent on the later thousands. A few may reach twenty per cent after a certain number of thousands are sold.[54] Occasionally when a work is valuable in itself but is likely to meet with a limited demand or slow sale, a publisher sometimes contracts that the royalty on the first thousand copies sold shall not become payable until after the second thousand copies have been sold. An author in this way often obtains a publisher for a good book which would entail too great a risk if issued on any other royalty basis. Under this plan the royalties accruing after the sale of the first thousand copies are payable on the usual semi-annual statement of account, while those which have accrued on the first thousand will be paid later when two thousand copies have been sold. The author should not be misled by the terms of this contract which may not be clear at one reading.[55]

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[54] See George Oppenheimer, "The Author's Profit From His Book," in Kennedy, *op. cit.*, pp. 22-25.

It does not follow that an author should drive the hardest bargain possible with his publisher. The promotion work of the publisher must not be overlooked and if he has an excellent contract with the author he is in a better position to push sales. A few publishers advance royalty payments, others do not.

All questions of serial rights, translation, syndicating, and revision must be understood clearly by the author and publisher in making their contract. When selling the serial rights of his work to a magazine, the author should be careful to set down in writing to the purchaser that he reserves the right to publish his material in book form after it has appeared in the magazine. Some magazine proprietors are also publishers of books and it is quite the usual and the courteous thing to offer them the first refusal of the book rights in the material which they are to publish in their magazine. Some publishers make this a condition before they will purchase the serial rights.

The Authors' League of America

For the benefit of the professional author, that is, those who regularly earn money in and make a business of such a profession, the Authors' League of America was organized in 1909 and incorporated in 1912. This organization, national in scope, endeavors to procure adequate copyright legislation, both national and international; to protect the rights and property of its members who create copyrightable material; to advise and assist such persons in business matters relating to the disposal of their productions and to obtain for them prompt remuneration therefor; to disseminate information among them as to their rights and remedies. Membership dues are $25 per year and any author of any kind, dramatist, artist, composer or scenario writer of recognized position in his or her profession may be admitted to the League upon proper application duly approved by the Council, a group of distinguished authors, or by the Membership Committee. At present the membership is about 2000.

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[55] See Booth, *op. cit.*, pp. 33-37.

The League is divided into the following divisions or Guilds: The Authors' Guild, the Dramatists' Guild, the Guild of Free-Lance Artists, the Screen Writers' Guild, and Membership at Large. The Guilds operate within and are part of the League and are subject to League government and discipline, although a Guild may maintain distant headquarters as in the case of the Screen Writers' Guild which has its own headquarters in Hollywood, California. The Membership at Large consists of those members of the League not specifically affiliated with any particular Guild. The League's official organ is the monthly *Authors' League Bulletin.*

The League has fought not only for better copyright laws but has attacked and exposed plagiarism, has opposed censorship considered undesirable to its members, has fought corrupt publishers and swindling concerns, has arbitrated disputes, and has furnished to "the youngster the acumen which has taken its older men many years to acquire." [56]

How the author may aid the publisher

One of the first things the author should do is to provide the publisher with a concise account of his book from his own point of view. He knows the work better than anyone else and should know its most valuable points. This account will furnish the publisher with data for his preliminary notices and advertisements. He should advise the publisher where and how a special interest in the work may be aroused and should provide him with names of journals and persons to receive copies for review. He should consult with him at every important stage of the production of the work from the time the manuscript is accepted until the book is marketed. This will include the selection of type, paper, color of binding, and the price to be asked. When reviews of the book begin to appear he may be of some service by sending the publisher excerpts from reviews which may be useful for new advertisements. Many publishers, however, secure most of these by subscribing to the service of clipping bureaus.

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[56] *The Author's League of America, Inc.*, a pamphlet (published yearly by the League, 2 East 23d Street, New York).

The market for books and periodical articles

When an author of an article or book becomes interested in a possible market for his production, he may learn much to his advantage, if he has no definite information as to the nature of the market, by consulting William Dorsey Kennedy's, *The Free-Lance Writer's Handbook*, pages 249-364 on the magazine market, and pages 364-378 on book publishers. Other types of markets are treated in other pages. These pages, in nature, are directories, giving the names of the publishing houses, their addresses, the type of work received and published, and some indication of the terms which the author may expect. During the years 1914-1925, the sale of books and pamphlets has shown an increase of 144 per cent. Contrary to what many persons appear to think, the output of fiction is not increasing but is below that of 1914. The big increase is in the non-fiction field, particularly in education, although it is not clear just what is included in the term "education." The data as compiled in the *Biennial Census of Manufactures* are vague, confusing, and in most cases not comparable, and little reliable information can be derived from the compilations found in such sources.[57]

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[57] *Cf.* also Frederick G. Melcher, "The Market for Non-Fiction Books," in Kennedy, *op. cit.*, pp. 26-31.

CHAPTER XV

INTERNATIONAL RESEARCH

Trends in international research

It is virtually impossible within a small compass to give more than a general idea of the status of international research and research organizations as they exist today. The *Handbook of International Organisations*[1] lists approximately 420 international organizations, most of which are engaged in or are sponsoring research in their particular fields. The number of international organizations in existence is so multitudinous, their nature so varied, and the confusion and overlapping of functions so great, that it is difficult to secure a clear perspective of modern trends in international research. In any event the research worker should recognize that it is practically impossible for him to engage in intellectual work in any field in which there is not an international association also functioning. The *Handbook of International Organisations* will supply him with much of the necessary information to guide him in further research.

Two centuries ago, according to George E. Hale, the Royal Society of London and the Paris Academy of Sciences easily could have embraced the entire range of science and could have included in their membership essentially all the able investigators of England and France.[2] This centralization in international intellectual cooperation, which we may think of as the first recognizable trend in international research, lasted until the establishment of the Linnean Society of London[3] in 1788, following which there began a dispersive movement which continued with cumulative force until about 1918.

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[1] *Handbook of International Organisations (Associations, Bureaux, Committees, etc.)*, Publications of the League of Nations, XII B, International Bureaux, 1927, XII B, 1 (League of Nations, Geneva, 1926). Hereafter cited as the *Handbook of International Organisations.*

[2] George Ellery Hale, "The International Organization of Scientific Research," *International Conciliation, No. 154* (American Association for International Conciliation, New York, Sept., 1920), p. 13.

[3] The Linnean Society of London is a learned society in the field of biology, including both zoology and botany. It publishes a *Journal* and *Transactions*

This second or dispersive movement has given rise to the great number of confusing international organizations with which we are confronted at present. In an effort to combat this multiplicative tendency and to bring order out of chaos, a third movement, centralizing and coordinating in nature, has become pronounced since about 1918. Some of the coordinating pressure has come from the League of Nations; part of it comes from organizations not connected with the League, which have created super-committees or other bodies in an effort to secure centralization. Other centralizing organizations are under the patronage of the League of Nations or maintain a friendly and working relationship with the League.

It is the purpose of this chapter to give only a general picture of the chief organizations engaged in carrying out the centralizing movements in international research; to do more would be unprofitable and entirely out of proportion in this study. Even the super-centralizing organizations have become so many and so confused in their functions that there is already a need for a centralizing organization of the centralizing organizations. Indeed, the situation is becoming one of confusion worse confounded.

Centralization in international research. The International Research Council[4]

The international scientific organizations that existed prior to the World War were many and varied. The old International Association of Academies which had been organized at Wiesbaden in 1899 was not sufficiently representative of the countries it included, was without permanent headquarters or adequate funds, had no contacts with the great majority of international scientific organizations, and was almost completely inactive between its triennial meetings. With these considerations in view, the Royal Society called an Inter-Allied Conference on International Organizations which opened in London in October, 1918.

(both irregular and in separate sections for zoology and botany) and annual *Proceedings*. See *The Year-Book of the Scientific and Learned Societies of Great Britain and Ireland* (Charles Griffin and Co., Ltd., London, 1929), pp. 145-146.

[4] See Hale, *op. cit.*, and the *Handbook of International Organisations*, p. 135.

The United States, along with seven other countries,[5] sent delegates. The United States delegates presented a plan for the creation of the International Research Council, the plan excluding the Central Powers. A second Inter-Allied Conference was held in Paris in November, 1918, under the auspices of the Paris Academy of Sciences, for the purpose of developing the plans of the London Conference. An executive committee of five members, representing France, Great Britain, Belgium, Italy, and the United States, was appointed to study in detail the questions presented to the Conference and those relating to the formation of new international organizations. The International Research Council, as well as some of its associated international bodies,[6] was inaugurated at the Brussels Conference in 1919.

One of its chief purposes was to coordinate international activities in the various branches of science, particularly in the fields of the physical and natural sciences, and to federate many of the national research councils (dealing with the physical and natural sciences), just as the National Research Council in the United States[7] was organized as a federation of national research agencies in the fields of the so-called exact sciences. Other general objects of the Council, in brief, were and are to encourage the formation of international associations or unions needed to advance science, to guide international scientific activities in fields where no adequate organization exists, and to establish relations with the governments represented in the Union for the purpose of interesting them in scientific projects.

The general Assembly, which consists of the accredited delegates of the various countries represented in the International Research Council, meets triennially at the permanent headquarters in Brussels. Between meetings the work is carried on by an executive committee. The United States is represented in this council by the Division of Foreign Relations of its National Research Council.[8]

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[5] Belgium, Brazil, France, Great Britain, Italy, Japan, and Serbia.

[6] The International Astronomical Union, the International Union of Geodesy and Geophysics, the International Union for Pure and Applied Chemistry, the International Mathematical Union, the International Union for Scientific Wireless Telegraphy, the International Union of Pure and Applied Physics, the International Union for Biological Sciences, and the International Geographical Union. Tentative statutes also were drawn for other international unions, for example, medicine and bibliography. See the *Handbook of International Organisations* for facts regarding these organizations.

[7] See below, pp. 432-438.

The International Research Council originated as a war organization and excluded by statute until 1931 the Academies of Germany, Austria, and their allies. In 1926, however, the Council rescinded this statute of exclusion and made overtures to the scholars of the Central Powers for collaboration.[9]

The International Union of Academies[10]

This international union, officially termed the *Union Académique Internationale* or U.A.I., was organized in Paris in 1919 upon the initiative of the *Académie des Inscriptions et Belles-Lettres.* It is a successor in the fields of historical and philosophical studies of the pre-War International Association of Academies, organized at Wiesbaden in 1899, just as the International Research Council is its successor in the fields of natural and physical sciences.

The International Union of Academies is a federation of the national academies or learned bodies devoted to philosophy, philology, archeology, history, economics, and the political and social sciences.[11] While this international union did not exclude by statute the scholars of the Central Powers, it did not show any disposition to invite their participation in the work of the Union until 1926.

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[8] This Division comprises in its membership the President and Foreign Secretary of the National Academy of Sciences and the President or other representative of the American Association for the Advancement of Science, the American Philosophical Society, and the American Academy of Arts and Sciences. Other members include an officer of the Department of State, serving as Vice-Chairman of the Division, the Chairman of the National Research Council and each of its Divisions, and certain members at large. Each important international scientific and technical organization in which the United States takes part is also to be represented in the Division. The latter acts for the National Research Council in dealings with the International Research Council, promotes cooperation in matters of common interest between the American national committees or other national representatives of international organizations, aids in the initiation of new international unions, keeps the State Department in touch with pending scientific and technical questions in which the government may be interested, and publishes annual summaries of international activities in science and technology.

[9] Waldo G. Leland, "The International Union of Academies and the American Council of Learned Societies," *Bulletin of the Institute of Historical Research* (Longmans, Green and Co., London, Nov., 1926), Vol. IV, No. 11, pp. 65-72.

[10] *Ibid.*

[11] The countries, with their respective academies and learned bodies affiliated with the Union, in July, 1926, were: Belgium, Royal Academy of Sciences, Letters and Fine Arts; Denmark, Royal Academy of Sciences and Letters;

Each member country is entitled to two voting representatives (with whom may be associated technical advisers) who are chosen by the academies or group of learned bodies in those countries with representatives in the Union. In a few countries the academies have associated with themselves the more important learned societies, while in the United States, where there is no national academy devoted to humanistic studies, a group of societies and associations has been organized.

The Union is supported by the contributions and annual dues of the member countries and has been so managed that a substantial surplus has been accumulated. Annual meetings of the Union are held in Brussels during the first half of May. The official headquarters are located in the *Palais des Académies* in Brussels. The Union has been given a legal status, *personnalité civile*, under Belgian law.

At the annual meetings reports are received on the progress of enterprises under way, the special committees decide questions of a technical character which may have arisen during the year in connection with the different undertakings of the Union, new projects are discussed and passed upon, and the policies of the Union are determined.[12]

Spain, Royal Academy of History, Academy of Moral and Political Sciences, Institute of Catalonian Studies; United States, American Council of Learned Societies; Great Britain, British Academy; Greece, Academy of Athens; Italy, National Academy of the Lincei of Rome, Royal Academy of Sciences of Turin, Academy of the Crusca of Florence, Royal Venetian Institute, Royal Academy of Archæology, Letters and Fine Arts of Naples; Japan, Imperial Academy; Norway, Academy of Sciences of Oslo; Netherlands, Royal Academy of Sciences of Amsterdam, Royal Dutch Geographical Society, Royal Institute of Dutch-Indian Philology, Geography and Ethnology, Batavian Society of Arts and Sciences; Poland, Polish Academy of Sciences of Cracow; Portugal, Academy of Sciences of Lisbon; Rumania, Rumanian Academy; Russia, Academy of Sciences of Leningrad; Serb, Croat, and Slovene State, Jugo-Slav Academy of Zagreb, Royal Serbian Academy of Belgrade; Czecho-Slovakia, Czech Academy of Sciences and Arts, Society of Sciences of Prague, Masaryk Academy of Labor. Leland, *op. cit.*, p. 67, note.

[12] The proceedings of the annual meetings, with the reports of progress, are published in the *Bulletin* of the Royal Belgian Academy, *Classe des Lettres,*

Thus far the enterprises adopted and conducted by the Union have little direct interest for the student of modern history, for the economist, or for the political or social scientist; but according to Mr. Leland this neglect is due more to the fact that students in these fields have failed to come forward with proposals than to lack of interest on the part of the members of the Union. The present enterprises lie mostly in the fields of philology or archeology. One undertaking is the development of the *Corpus of Ancient Vases*, the purpose being to provide a vast repertory of photographic reproductions of the ancient vases in the various collections throughout the world. This work is under the immediate direction of M. Edmond Pottier of the Musée du Louvre. The Union also is engaged in compiling a *Dictionary of Mediæval Latin* dealing with the Latin of the fifth to the eleventh centuries. The work is under the direction of a central committee, which has headquarters in Brussels and of which Dr. H. Goelzer is secretary, and is being carried on by groups of scholars in different countries. The enterprise publishes quarterly the *Bulletin Du Cange*, so named because of the fact that the project originally called for a revision of the Glossarium of Du Cange.[13] Another task engaging the attention of the Union is development of a *Catalogue of Alchemical Manuscripts*, of which two volumes have been published. This work is under the direction of Professor J. Bidez, assisted by an international committee.

Certain other enterprises are carried on under the patronage of the Union, though not directly by it. These may be mentioned briefly: A *New Edition of the Works of Hugo Grotius*, under the direct supervision of the Academy of Sciences of Amsterdam; the collection of documentary material for a dictionary or *Encyclopædia of Indonesian Customary Law*; the compilation of a general archeological map of the Roman Empire (*Forma Romani Imperii*); the supplementing of the *corpora of Greek and Latin inscriptions*; a search for archival documents and historical

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and are reprinted for distribution under the title *Compte rendu de la . . . ème Session Annuelle du Comité, Union Académique Internationale*. Copies may be secured from the secretariat of the U.A.I., *Palais des Académies*, Brussels. See Leland, *op. cit.*, p. 68.

[13] For a further discussion of this subject see Leland, *op. cit.*, pp. 96-97.

manuscripts in European depositories relating to Japanese history; the compiling of the *corpus of ancient mosaics in Greece.*[14]

At its meeting in 1926 the Union adopted the American proposal for a general survey of the present state of current bibliography in the humanistic studies, and discussed, reserving its decision for the year 1927, the Dutch proposal for a retrospective and historical encyclopedia of international law.

The Union of International Associations

This Association, founded by La Fontaine and Otlet in 1906, is located in the Palais Mondail, Brussels. It is subsidized by the Belgian Government and the Carnegie Endowment for International Peace and has for its object the study of facts regarding international life; the development of a confederation of international associations with a view to a joint action toward forming an integral organization; and the development of the spirit of internationalism by strengthening the bonds of relationship beyond national frontiers. The governing body assumes the form of a central office, a permanent committee, and a world congress. There are over 150 affiliated associations. The Union published *La Vie internationale* (a monthly which lapsed in 1914); *L'Annuaire de la Vie internationale* (two volumes, 1908-1909 and 1910-1911); the records of the World Congresses; and *Le Code des Vœux et Resolutions des Congrès Internationaux.* It has founded an international museum; an international library; a universal bibliographical catalog of international documentary records; a bureau of translation, exchange, information, and an international center. In 1920, it organized and founded the International University, also located in Brussels, in order to provide advanced students of all countries with an opportunity of obtaining a general and international view of present-day problems by attending courses and lectures given by university professors of different countries.[15]

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[14] *Ibid.*

[15] See *Handbook of International Organisations,* pp. 151 and 168. It is in error in fixing the date of origin as 1910. See also David Allan Robertson, *International Educational Relations of the United States,* reprinted from *The Educational Record* (American Council on Education, 26 Jackson Place, Washington, D. C., April, 1925), p. 56.

The League of Nations and research

The organization of the League of Nations was accompanied by efforts to centralize some of the many international organizations interested in research. Some of the organizations have been placed directly under the control of the League, the patronage of the League has been extended to others, while regarding all others the League has endeavored to secure and compile information.[16]

It may be well at this point to present a general outline of the organization of the League of Nations for the convenience of the general reader.[17] 1. The main organs of the League are three: (1) the Assembly, (2) the Council, and (3) the Secretariat-General. The first two deal primarily with political problems. The last serves as a clearing house of information, acts as a connecting link between the political and non-political activities of the League and between the several League organizations and the member governments, keeping the League informed of the activities of the latter. It organizes the League Conferences, prepares all agenda for them, and keeps the archives.

The Secretariat is composed of eleven Sections distributed under the general staff as follows: (1) Under the Secretary-General: Section I, Administrative Commissions and Minorities; Section II, Mandates; Section III, Social Questions and Traffic in Opium; Section IV, Disarmament; Section V, Legal—*Bureau du Conseiller juridique*; and Section VI, Information. (2) Under the Deputy Secretary-General: Section VII, Economic and financial; Section VIII, Communications and Transit; and Section IX, Health. (3) One Under Secretary-General is in charge of internal administration. (4) Another is in charge of Section X, International Bureaus and Intellectual Cooperation. (5) A third Under Secretary-General is in charge of Section XI, the Political. Besides the Sections the Secretariat includes (1) the Financial Administration Office (budget and financial control); (2) Latin-American Bureau (liaison between League and Latin American countries); and (3) the Department of General Jurisdiction.

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[16] This information has resulted in the *Handbook of International Organisations* supplemented by a *Quarterly Bulletin of Information on the Work of International Organisations,* the latter published by the Secretariat of the League. League documents may be purchased from the World Peace Foundation, 40 Mt. Vernon Street, Boston, Mass., or the League of Nations Non-Partisan Association, 6 East 39th Street, New York, N.Y. The series of documents available are as follows: IA, Administrative Commissions; IB, Minorities; II, Economic and Financial; III, Health; IV, Social; V, Legal; VIA, Mandates; VIB, Slavery; VII, Political; VIII, Transit; IX, Armaments; X, Financial Administration of the League; XI, Opium and Other Dangerous Drugs; XIIA, Intellectual Cooperation; XIIIB, International Bureaux; XIII, Refugees; and XIV, General Questions.

[17] Georges Ottlik (Ed.), *Annuaire de la Société des Nations, 1920-1927* (Librairie Payot and Cie, Lausanne et Genève; Les Editions de Genève, Genève, 1927). Another classification of sections is suggested in C. Howard-Ellis, *The Origin, Structure and Working of the League of Nations* (Houghton Mifflin Co., Boston, 1928): (1) Those serving the League or the Assembly and Commissions directly; (2) those serving some advisory, technical, or administrative organizations; and (3) those providing internal services.

2. The auxiliary organs of the League are four: (1) The technical organizations: (a) Economic and Financial Commission; (b) Communications and Transit Commissions; and (c) the Health Commission. (2) Permanent consultative advisory commissions: (a) military, naval, and aerial questions; (b) intellectual cooperation; (c) commission of control—budget; (d) mandates; (e) protection of youth and infancy; (f) opium; and (g) distribution of expenses. (3) Temporary consultative advisory commissions: (a) Committee of experts for the progressive codification of international law; (b) preparatory commission for the disarmament conference; (c) commission for the study of Ciraolo project; and (d) a mixed commission for economic aspects of disarmament conference. (4) Administrative or executive organizations: (a) High Commissioner for the free city of Dantzig; (b) High Commissioner for the Refugees; (c) Commission for the government of the Saar; (d) Autonomous Office for establishment of Greek refugees; and (e) the Commissariat for the Bulgarian refugees.

3. The Permanent Court of Justice at The Hague is an autonomous organization although it works in harmony with the League. The International Labor Office is a semi-autonomous organization closely affiliated with the League and probably contributes as much to international research as any international organization in existence.

4. Finally, there are certain special organizations such as the Institute of Intellectual Cooperation located at Paris and under the direction of the International Committee of Intellectual Cooperation (see permanent consultative advisory commissions

above), and the Institute for Unification of Private International Law located at Rome.

It doubtless is obvious that only certain ones of the organizations just mentioned contribute substantially to the important developments in international research. Those contributing most will be examined briefly. It also should be pointed out, before surveying these contributions to research, that Article 24 of the Covenant, which defined the relations of the League of Nations with international bureaus, provided that all international bureaus already established by general treaties should be placed under the direction of the League if the parties to such treaties consent. All such international bureaus and all commissions for the regulation of matters of international interest created thereafter were to be placed under the direction of the League. In all matters of international interest which are regulated by general conventions but which are not placed under the control of international bureaus or commissions, the Secretariat of the League, subject to the consent of the Council and if desired by the parties, was required to collect and distribute all relevant information and render any other assistance which might be necessary or desirable. The Council was authorized to include as part of the expenses of the Secretariat the expenses of any bureau or commission which is placed under the direction of the League.

The Council also extends its patronage under certain conditions to international bureaus not created by treaty or general agreement. These conditions are, briefly, that a formal request must be submitted, an inquiry must be made into the nature of the organization, and approval of the League secured. Up to 1926, four international bureaus were placed under the direction of the League, and the Secretariat is collecting data on all existing international bureaus.[18]

One of the important organizations of the League of Nations which contributes much to research is an auxiliary organ, the International Committee on Intellectual Cooperation, the contributions of which now will be examined.

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[18] Published in the *Handbook of International Organisations* and the *Quarterly Bulletin of Information on the Work of International Organisations.* The four bureaus already listed do not concern us vitally in this work. They are the International Bureau of Assistance, the International Hydrographic Bureau, the Central International Office for the Control of Liquor Traffic in Africa, and the International Commission on Air Navigation.

The International Committee on Intellectual Cooperation

In September, 1921, the Assembly of the League of Nations invited the Council to appoint a committee to inquire into international questions of intellectual cooperation. This Committee was appointed in May, 1922, as one of the so-called auxiliary committees and organizations of the League of Nations which are listed as permanent and advisory. It is formally known as the International Committee on Intellectual Cooperation and is concerned primarily with international research, being the governing body of the International Institute for Intellectual Cooperation which began its labors in Paris in November, 1925, as a continuous working agency organized and equipped to carry forward the recommendations of the Committee. The Committee is an advisory committee of the Council and its proceedings are reported for approval quarterly to the Council and annually to the Assembly.

This International Committee of the League is composed of fourteen members representing fourteen countries of which the United States is one. Meetings of the whole Committee and of sub-committees are held at least annually. The parent Committee inquires particularly into questions of international cooperation regarding (1) bibliography (including the exchange of publications), (2) inter-university relations (including the international exchange of professors and students, the international equivalence of diplomas, and the development of an international association of universities and of intellectual associations of students), (3) the protection of intellectual property, and (4) arts and letters.[19]

With the prestige of the League of Nations behind it, this Committee can take up matters of scholarly and general intellectual interest directly with governments, and can hope to obtain special governmental support for the holding of international congresses and reunions of international groups of experts for the study of special methods of intellectual life common to many nations.

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[19] Vernon Kellogg, "The League of Nations Committee and Institute of International Cooperation," *Science* (Sept. 24, 1926), Vol. LXIV, No. 1656, pp. 291-292.

This is a characteristic which the pre-war international organizations, in general, did not possess. They were not in a position to draft international conventions for the consideration of governments, much less to carry them through without delays. Many of them were of a private or semi-official character, specialized in nature, and had little interest in coordinating the work of a duplicating and overlapping nature.

In 1924 National Committees were organized to act for the International Committee in matters falling more particularly within the national sphere, such as collecting information, suggesting international problems for study, and securing the adherence of particular countries to a general international program. There is a committee representing the United States in such matters.[20]

The International Institute of Intellectual Cooperation

In 1924 the International Committee on Intellectual Cooperation, which had been hampered from the beginning by lack of funds and by lack of a permanent organization to prepare its program and carry out its plans, appealed to governments and other agencies for aid. The French government responded with an offer of two million francs annually and a building in Paris to serve as an International Institute of Intellectual Cooperation under the complete control of the League, to carry out the projects of the Committee. The Council and Assembly of the League of Nations accepted the offer of the French government, rules were drawn up to safeguard the international character of the Institute, and it opened its offices in the Palais Royal late in 1925. Although the Institute is situated in Paris, which offers more and larger library and informational advantages than Geneva, and is so far chiefly supported financially by the generosity of France—Poland and Czecho-Slovakia have made some appropriations—it is thoroughly international in spirit and make-up.

The framework of intellectual cooperation, in accordance with decisions of the Council and the Assembly of the League, has assumed in brief, the following form: The International Committee on Intellectual Cooperation, appointed by the Council of the League, is the governing body; the International Institute of Intellectual Cooperation at Paris is the executive and working organ of the Committee and refers the detail of special questions to sub-committees; National Committees on Intellectual Cooperation, constituted by the various countries, collaborate in international questions with the central International Committee; and finally there are Government Delegates accredited to the Institute who secure for the Institute the direct contacts with governments necessary for the accomplishment of its projects. These delegates meet periodically as a group in Paris.

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[20] *The International Institute of Intellectual Cooperation,* a pamphlet (The League of Nations, Paris; Imprimeries Parisiennes Réunies, Paris, 1926), p. 4.

The institute has a director and deputy-director, a general secretary, certain chiefs and assistant chiefs of sections, all serving full time, and, in addition, a number of occasional special investigators serving for limited periods.[21] Seven sections have been created to carry on the work: (1) Section for General Affairs, (2) Section for University Relations, (3) Section for Scientific Relations, (4) Section for Literary Relations, (5) Section for Artistic Relations, (6) Legal Section, and (7) the Information Section.

The General Section has made close contacts with the outstanding general international associations, it conducts a service of documentation on intellectual questions, it has begun to publish a selected bibliography on the international organization of intellectual life, it is preparing the ground for an international statistical survey of intellectual activities and a repertory of international institutions and associations.

The University Section has been studying the international relations of universities, particularly with reference to the exchange of professors and students. It publishes a *Bulletin of University Relations,* which gives an account of the international activity of universities in all parts of the world.

The Science Section has a wide field of action, since all the sciences are in need of agreements and research programs conceived on an international scale that will economize effort by avoiding duplication of work. This section has prepared an agreement among libraries in various parts of the world for an international information service available to the public. Agreements have been concluded for the coordination of the bibliography of economics, classical antiquity, and biology. Other agreements have been made regarding national and international yearbooks of intellectual life. It is studying projects for an international lending library, the reorganization of analytic bibliography in the physical sciences, and the creation of a permanent international bureau of meteorology; it keeps in close touch with the proceedings of scientific congresses; and it publishes the *Bulletin of International Scientific Relations.*[22]

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[21] Kellogg, *op. cit.*, pp. 289-290; *The International Institute of Intellectual Cooperation* (The League of Nations, Paris; Imprimeries Parisiennes Réunies, Paris, 1926), pp. 13-14.

The Section for Literary Relations concerns itself to a large extent with the problem of translations and has under consideration a bureau of literary information for writers and publishers. The functions of the Section for Artistic Relations are implied in its name. The Legal Section has concerned itself largely with questions of copyright and scientific property and the status of international associations not formed for profit. The Information Section has conducted inquiries on press associations, on schools of journalism, and on the obstacles preventing the free circulation of books throughout the world. It publishes lists of the best books which have appeared in the individual countries in given years. It concerns itself with the organization of the different national services at the Institute and publishes a bulletin which gives an account of its general activities.

In addition to these sections there is a Co-ordinating Committee consisting of twenty-one major international associations, interested in the problems of education and international understanding, attached to the Directors' Department.[23]

The Economic and Financial Commission of the League of Nations

This Commission, listed above as one of the auxiliary technical organizations, was organized in 1920 to advise the Council and Assembly of the League of Nations on all economic problems, whether of a general nature or in relation to any particular

[22] "The First Six Months of the International Institute of Intellectual Cooperation," *Science* (Aug. 20, 1926), Vol. LXIV, No. 1651, p. 175.

[23] *The International Institute of Intellectual Cooperation* (The League of Nations, Paris; Imprimeries Parisiennes Réunies, Paris, 1926), Addenda.

country that may be referred to it, and to prepare, if necessary, for international conferences on economic and financial subjects.

The Commission, composed of twenty-four members, is divided into two parts—the Economic Committee and the Financial Committee, the chairmanship being filled by the members in rotation. The Secretariat is supplied by the Secretariat of the League of Nations.

The principal activities of the Financial Committee have been the financial reconstruction of certain countries such as Albania, Austria, and Hungary; the control of Greek and Bulgarian refugee schemes and the Danzig Municipal Loan; an inquiry into the economic and financial position of certain countries, for example, Esthonia; inquiries into currency problems and the stabilization of currency; an investigation of the questions of double taxation and tax evasion[24] and of counterfeiting currency.

The work of the Economic Committee has included unification of laws on bills of exchange, the drafting of a protocol on arbitration clauses in commercial contracts, the execution of arbitral awards, the attempt to secure equitable treatment of foreigners and foreign enterprises, the investigation of unfair competition (false trade-marks and indications of origin), collaboration with the International Labor Office on various questions (economic crises, unemployment, etc.), unification of methods of compiling economic statistics, drafting of a convention on the simplification of customs formalities, the protection of foreign buyers against worthless goods, the suppression of false customs declarations, and the attempt to secure the abolition of import and export prohibitions and restrictions.

The members of the Committees are appointed by the Council on their personal qualifications and do not officially represent the countries to which they belong. The publications of the Commission are: *Monthly Bulletin of Statistics, Memoranda on Public Finance, Currency and Central Banks, The Balance of Payments and Foreign Trade Balances, Report of the Application of the Brussels Recommendations*,[25] and numerous reports and memoranda on the special conditions in various countries.[26]

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[24] See for example the *Report on Double Taxation* submitted to the Financial Committee by Professors Bruins, Einaudi, Seligman, and Sir Josiah Stamp (Economic and Financial Commission, League of Nations, Geneva, April 5, 1923.)

The work of the various experts on double taxation has culminated in a collection of treaties and internal provisions, together with six final draft conventions agreed upon by the meeting of government experts of October, 1928. These are published by the League of Nations in a *Collection of International Agreements and Internal Legal Provisions for the Prevention of Double Taxation and Fiscal Evasion,* League document, 1928, II, 45 (League of Nations, Geneva, 1928).

The International Labor Organization

Part XIII of the Treaty of Peace of Versailles and the corresponding parts of the other treaties of peace provided for this organization, which in a sense is separate from that of the League of Nations and in another sense is a part of the League. It is an official, autonomous body of fifty-six nations in association for the betterment of standards of life and work of the great mass of wage earners throughout the world. It is a treaty-making organization limited to the field of labor and industry. It formulates and recommends appropriate labor standards for its member states. Research and study of labor problems is a basic activity and is fundamental to its work. It has its own constitution and laws, its own building and working force, but its budget must be included in the budget of the League and approved by the Assembly before it becomes valid. The first Article of Part XIII provides that the original members of the League of Nations shall be original members of this Labor Organization and thereafter membership of the League of Nations shall carry with it membership in the International Labor Organization. The spirit which inspired the creation of this organization is embodied in the terms of Article 23 of the Covenant of the League of Nations, which lays down that members of the League will endeavor to secure and maintain fair and humane conditions of labor for men, women, and children, and for that purpose will establish and maintain the necessary international organizations. The Organization is the natural development of the International Association for Labor Legislation which had been established some years before for the purpose of bringing about the regulation of labor conditions by international agreement. It also is the outcome of reiterated demands on the part of the working classes of the chief industrial countries of the world, who at their various conferences urged the creation of such an organization.[27]

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[25] The Commission was the outgrowth of the recommendations of the International Financial Conference held at Brussels.

[26] *Handbook of International Organisations*, pp. 15-16; *Report on the Economic Work of the League of Nations*, a pamphlet (Economic and Financial Section of the League of Nations, Geneva, May, 1927), C.E.I. 41; *Economic and Financial Organisation*, League of Nations, Secretariat, Information Section (Berger-Levrault, Nancy, Paris, Strassburg, 1928), rev. ed.

The International Labor Organization, located at Geneva, comprises (1) the General Conference of Representatives of the Members (of which there are fifty-six), and (2) the International Labor Office controlled by the Governing Body.[28] The International Labor Conference meets at least once each year, each State being represented by two government delegates, one employers' delegate, and one workers' delegate. Each delegate may be accompanied by technical advisers for assistance in technical matters. The Conference can make no laws although it votes draft conventions and recommendations which are placed before the legislative bodies of the respective representative countries.

The permanent International Labor Office is the executive body of the Organization and functions under the control of the Governing Body which meets normally every three months and consists of twenty-four persons, of whom twelve are named by the governments of the member nations, six by the employers' delegates to the conference, and six by the workers' delegates. The Labor Office, which has a Director and a Deputy Director, corresponds in general to the Secretariat of the League of Nations. The administration of the permanent organization is divided into three parts: (1) The Diplomatic Division which organizes and prepares the work of the conferences and deals with all official correspondence between the Office and governments; (2) the Intelligence and Liaison Division which is responsible for collection and distribution of information; and (3) the Research Division which is responsible for scientific studies and inquiries. Attached to these three divisions are ten technical sections composed of experts who devote their attention in general to the study of such questions as those relating to unemployment, industrial hygiene, safety, disablement, social insurance, industrial relations, and cooperation.

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[27] *The International Labour Organisation of the League of Nations* (League of Nations Union, 15 Grosvenor Crescent, S.W., London, Oct., 1922), No. 96, pp. 1-3.

[28] See the *Handbook of International Organisations*, pp. 30-31, for a discussion of these divisions.

In order to preserve continuous contact with the various countries the Labor Office has permanent correspondents or branch offices in the capitals of the chief countries. The correspondents and branch offices assist the Labor Office in following more closely the principal movements in industry and labor. Their functions are mainly to act as intermediaries between the Office and the government and employers' and workers' organizations in their respective countries.[29]

There is a close cooperation between the International Labor Office and the Secretariat of the League of Nations with regard to all questions which concern both organizations. The technical sections of the two offices are in continual touch with one another. In addition, the Director of the International Labor Office attends the meetings of the Council of the League on its invitation whenever an item on its agenda presents an aspect directly concerning the interests of the workers.

In brief, the chief purposes of the International Labor Organization are two: (1) to develop uniformity of labor legislation throughout the world, subject to local circumstances, climate, and custom; (2) to collect and distribute information on all subjects relating to industrial and labor conditions. The International Labor Office aspires to become a world clearing house of authoritative information on such questions as unemployment, emigration, cost of living, wages, production, labor legislation, and industrial hygiene, and thus to enable each country to benefit by the experience of all.

The publications of the Labor Office are many and are important to the research worker in the field of labor.[30] The Research Division which is the important factor in research is divided into ten sections, each making valuable contributions in the varied aspects of labor problems with which the research worker in labor should acquaint himself if he expects to have a knowledge of a complete bibliography of his field. These sections have been set forth as follows:[31]

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[29] The National Correspondent in the United States is Liefur Magnusson, Lenox Office Building, 1523 L Street, Washington, D.C.

The material collected by the International Labor Office is available for the use of any government, organization, or individual desiring information on any question relating to labor conditions.

[30] The International Labor Office publishes the following periodicals dealing with industrial economics: A monthly *International Labor Review* containing special articles and regular statistics as well as bibliographies and legislative notes and references; a weekly *Industrial and Labour Information* containing

(1) First Section: "Preparation of statistical studies relating to labour."

(2) Second Section: "Preparation of studies relating to legislation and the legal regulation of labour."

(3) Third Section: "Preparation of studies of labour conditions other than those having solely or essentially a statistical or juridical basis; intellectual workers, woman and child labour, night work; workers' leisure; technical training (pre-apprenticeship, vocational guidance, apprenticeship, technical education); scientific methods of work."

(4) Fourth Section: "Comparative studies of methods of preventing unemployment; comprehensive study of economic factors in so far as they affect labour, output, etc."

(5) Social Insurance and Disablement Service.

(6) Unemployment Service: "Prepares comparative studies of the various technical problems connected with unemployment: statistical methods, systems of unemployment relief and insurance, methods of finding employment, relief works, etc. Studies the

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current news on industrial questions from the entire world; an annual service of translations of labor legislation of all countries; an annual *Directory* of Government labor departments, Employers' Associations, Workers' Organizations and Cooperative Organizations, etc.; an irregular *Official Bulletin* which chronicles the work of the Office and keeps current information concerning the progress of ratification of conventions; a bi-monthly *Industrial Safety Survey* dealing with accident prevention; a *Monthly Record of Migration* containing regular statistics of migration movements throughout the world; and many series of *Studies and Reports,* each of which is based on investigations carried on under the supervision of the Office; also reports on all subjects discussed at the Annual Conference, and the proceedings of the Conference.

The Office is continually supplying information to organizations and individuals throughout the world; it was instructed in the charter creating it to collect and disseminate such information.

For other publications and for greater detail, see *Catalog of Publications, The International Labor Office, Geneva, Switzerland, No. 6* (World Peace Foundation, 40 Mt. Vernon St., Boston 9, Mass., May, 1927).

[31] *Handbook of International Organisations,* pp. 33-34.

facts and problems relating to employment in relation to economics . . . ; enquiries carried out in conjunction with the Economic Section of the League of Nations."

(7) Agricultural Service: "Studies relating to agricultural labour."

(8) Industrial Health Service: "Deals with all questions connected with industrial hygiene . . . ; liaison with Health Organization of the League of Nations."

(9) Safety Service: "Studies reports of factory inspectors in respect to accident prevention and of other organizations which enforce safety measures. . . ."

(10) Russian Service: "Special study of labor conditions in Soviet Russia."

The International Institute of Bibliography

Some of the centralizing international organizations engaged in research are under the patronage of the League of Nations although not connected with the League directly. One of these is the International Institute of Bibliography.

This Institute, which was founded at the meeting of the first International Congress on Bibliography in 1895, is located temporarily at the Palais Mondial, Brussels. Its object is to promote the study and development of bibliography, the study of books and documentation, to unify bibliographical methods, to establish a world organization by means of conventions, to federate national and international organizations interested in the subject, to cooperate with the Union of International Associations, and the international institutes of the Palais Mondial.

In 1924 an agreement was concluded between the Institute and the League of Nations by which the League granted its patronage to the work of the Institute in certain spheres and promised to assist as far as possible its work within these limits.

The divisions of the Institute, over which its activities extend, may be listed as follows: (1) Collections and services which comprise (a) universal bibliographical files, classified according to subject and author with thirteen and a quarter million entries; (b) collaboration with the international associations in compiling the *Encyclopédie documentaire* on the file system, collaboration with the International Library, and with the International Press Museum;[32] (c) Bibliography Section of the International Encyclopædical Museum, devoted to local consultations and distribution of information. (2) The division of international methods comprising the rules regarding catalogs and the universal bibliographical classification (decimal system). (3) The Publications Division which concerns itself with a *Bibliographia universalis*, with collections of articles printed in the *Répertoire bibliographique universel* (112 articles with 225,000 notices), with various bulletins and publications, and with the *Manuel de l'institut international de bibliographie.*[33]

The International Exchange Service

This Service, located at Brussels, was created in pursuance of Conventions concluded at Brussels on March 15, 1886, concerning the international exchange of official documents and scientific and literary publications, and the immediate exchange of the official journal and parliamentary records and documents.

Its objects are to maintain the regular exchange between civilized countries of all official and parliamentary documents, and to promote the exchange of literary and scientific publications of a nature to contribute to their mutual knowledge; and to serve as an unofficial intermediary between learned bodies, such as scientific and literary societies in the contracting countries, for the receipt and dispatch of publications to be exchanged. Most of the leading countries, including the United States, participate in this service.

In July, 1924, the Committee of Experts convened by the League of Nations drew up a new Convention for the limited exchange of official publications and for the exchange of scientific and literary publications. All States, whether they had or had not signed the Conventions of 1886, were invited by the Council of the League of Nations to consider the possibility of accepting the new Convention.[34]

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[32] The management of the *International Press Museum*, founded in 1907, also is in the hands of the *International Institute of Bibliography* and the *Union of International Associations*, both located at the Palais Mondial, Brussels. See *Handbook of International Organisations*, p. 131.

[33] *Handbook of International Organisations*, p. 113.

[34] *Ibid.*, pp. 93-94.

Miscellaneous international research organizations

There are some miscellaneous international research organizations of interest to the research worker in the various sciences which are independent of the League of Nations but most of them are not characterized by any pronounced centralizing tendencies; they are merely the conventional international associations acting as the central organizations for their respective national members and are making no special efforts to effect a centralization of the international organizations which overlap one another in their functions.[35] Many of them contribute to the general confusion of organizations in international research.

[35] The social scientist might find it profitable to familiarize himself with the work of such organizations as the *International Committee for Historical Sciences,* founded in May, 1926, in order to promote historical sciences through international cooperation and to organize international congresses on historical sciences, with headquarters at Washington and with some twenty members including the United States; the *International Institute of Sociology and Political and Social Reform,* organized in November, 1919, to develop and popularize the study of sociology and economic and social sciences in present post-War problems and the most pressing social and international reforms, with headquarters at Turin, Italy, and with some twenty countries adhering; *The International Institute of Sociology,* founded in 1893, to unite the sociologists of various countries for the scientific study of sociological problems, consisting of eminent sociologists of all nations, with headquarters at Paris; *The International Anthropological Institute,* founded in 1920, with headquarters in Paris, to stimulate scientific research in anthropology in all countries, to enable research workers to get into close touch with one another, and to unify anthropological methods, with about twenty nations adhering; the *International Statistical Institute,* founded in 1885 and located at The Hague; the *International Bureau of Commercial Statistics* founded in 1913 and located at Brussels; and the *Foundation "Pour La Science," International Centre For Synthesis,* founded in November, 1925, located in Paris through the extension of the friendly hospitality of the *International Institute for Intellectual Research,* to promote and coordinate research in pure science and thus counteract the drawbacks of overspecialization and purely utilitarian preoccupations, a Section of Historical Synthesis being included among the proposed Sections. These and many international associations of a similar nature—and of outstanding interest are the various international law organizations—will be found mentioned in the *Handbook of International Organisations,* frequently cited above, and others are listed by Robertson, *op. cit.* One may mention the *Institut Intermédiaire International,* which is somewhat akin to the international law organizations. It was founded at The Hague in 1918 by leading Dutch authorities on international affairs, its object being to supply information on all questions of international importance not of a personal and secret character, which bear on international law, Dutch and foreign law and jurisprudence, or on economic and statistical data and commercial policy. It publishes quarterly *Bulletins* and other reports. Certain federations of international organizations will be found mentioned in the *Quarterly Bulletin of Information on the Work of International Organizations,* compiled by the Section of Inter-

The confusion of international research organizations

One cannot proceed far with a survey of the existing international organizations without being impressed with the tremendous confusion and overlapping of purposes and functions. Considerable vagueness attaches to the purposes and plans of many of the organizations. Their efforts often are entirely futile. Many could expire without causing a ripple on the stream of intellectual progress. The world is afflicted with committees and organizations and in no place probably is it more obvious than in the great multitude of international organizations. It seems quite clear that the efforts of the League of Nations and of the other organizations working for centralization and coordination are well-advised indeed. Regardless of any one's beliefs relative to the dangers of too much organization and centralization handicapping individuals in research, there appears to be nothing but clear gain in the simplification of the structure of international research organizations.

Certain organizations, notwithstanding their international aims and activities, are so clearly national in their constitution and sources of financial support that they are not included in the *Handbook of International Organisations* and are excluded also from this discussion. Among them are the Carnegie Endowment for International Peace and the Carnegie Institution, the International Health Board of the Rockefeller Foundation, the Institute of International Education, the World Peace Foundation—

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national Bureaux (League of Nations, Geneva). Some of these, for example, are the *International Federation of Journalists*, the *International Federation of League of Nations Societies*, the *International Federation of Intellectual Unions* and others of a similar nature. On the International Chamber of Commerce, see Frederick P. Keppel, "The International Chamber of Commerce," *International Conciliation* (May, 1922); also to be found in W. Brooke Graves (Ed.), *Readings in Public Opinion* (D. Appleton and Co., New York, 1928), pp. 1234-1242.

From November 26 to December 14, 1928, an International Conference on Economic Statistics was held at Geneva and arranged a Convention with regard to the scope and method of economic statistics. The Conference was attended by delegates of 42 countries, of which 35 were members of the League of Nations, and seven were non-members. Twenty-three states signed the Convention at the time, eleven others signed later among which was the United States. The principal features of the Convention are those dealing with (1) statistics of production, (2) statistics of commerce, and (3) organizations for future work. For a fuller report see *United States Daily* (Feb. 4 and 27, 1929).

all in the United States; the Nobel Foundation in Sweden and the Solvay Institute in Belgium; institutions working for a more intimate understanding and cooperation between two or more nations, such as the Instituto Ibero-Americano at Hamburg; the American University Union in Europe; and the International Rivers Commissions (Rhine, Elbe, Oder, and Danube). Certain others, such as the Pan-Unions, which are semi-international in character, constitute exceptions and justify inclusion.

The Pan-Unions

The Pan-Unions which now exist are doing much to foster research in their respective fields of interest and although they may be considered as occupying a position somewhat between national and international organizations, their research properly and logically should be surveyed, at least briefly, in any discussion devoted to international research.

The Pan American Union

In 1890 an association of the American States was effected under the title of the "International Union of American Republics," represented in Washington by a bureau called "The Commercial Bureau of the American Republics." In 1910 at the Buenos Aires Conference the present names were adopted: the association of the States became the "Union of American Republics" and the bureau became the "Pan American Union." The Union (the Bureau), supported by all the republics of the American continents, is a non-political organization aiming to promote better understanding and closer bonds of friendship among the American countries by exchanging mutually useful information concerning commerce, finance, agriculture, public health, industry, labor, education, and peace. It compiles and classifies information relating not only to treaties and conventions concluded by the American republics but to their internal legislation. It acts as the Permanent Committee for American International Conferences and keeps the archives; it promotes the ratification of resolutions and conventions adopted; it studies and carries out proposals included in the program for the next Conference; it submits to the governments, three months before the meeting of each Conference, a report on the work accomplished by the Bureau of the Union since the conclusion of the preceding Conference.

It publishes a monthly bulletin in English, Spanish, and Portuguese; four special reprint series devoted to (1) agriculture, (2) education, (3) finance, industry, and commerce, and (4) public health and social welfare; an Archeological Series (in Spanish); a series devoted to forestry; the Culture Series (in English, dealing with art, music, poetry, etc.); the Pan American Patriots Series (English); the American Nation Series; the Foreign Trade Series; and the Miscellaneous Series (English and Spanish, dealing with subjects of historical and literary interest). A publicity service is maintained and efforts are being made to broadcast Latin American musical compositions through the United States Army band. The director conducts each summer a Pan American discussion group at the Institute of Politics at Williamstown, Mass. In addition, the Union has established files for the collection of information on laws and tariffs, finance, social welfare, and municipal affairs in Pan America. It collects special material on the organized labor movement in the Americas, such as labor laws, working hours and conditions, and transmits it monthly to the International Labor Bureau at Geneva, a service which is deemed highly valuable to the International Labor Office. It maintains exhibits in the Pan American Building for the benefit of visitors, and has in its Columbus Memorial Library over 60,000 books and pamphlets, receiving regularly more than a thousand newspapers and magazines.

The Union acts as a center of educational information for the associated countries, fosters the exchange of professors and students, educational federations and congresses, creation of fellowships, student tours at reduced rates, the acceptance of credentials, the exchange of educational and scientific publications, and engages in other related educational activities.

As a result of the increased movement of capital to the South American countries the Union created a Division of Financial Information. There is also a Statistical Division which compiles and publishes Latin American commercial statistics and a Pan American Sanitary Bureau which issues the *Pan American Sani-*

tary Bulletin. The Union also maintains a Section of Municipal Information and a Section of Labor Information.[36]

The Pan-Pacific Union

This Union was founded in 1912 and is located at Honolulu. Its purpose is to promote the progress of all the races and nations of the Pacific. The Union, in collaboration with the chambers of commerce and various educational bodies, endeavors to create a better understanding among the nations concerned; it organizes conferences of delegates of the nations of the Pacific for the discussion of the best methods to be adopted in each of those countries; it seeks to establish and maintain, in Hawaii and in the other countries of the Pacific, bureaus to furnish information and instruction on questions affecting the peoples of the Pacific. The Pan American Union is one of the members of this Union. A Pan-Pacific Science Congress was held in Honolulu in 1920, subsequent meetings being held in Australia and Japan. The fourth was held in Batavia, Java, in May, 1929.[37] It publishes as its official organ the *Mid-Pacific Magazine*, and as sections of the magazine the *Pan-Pacific Youth* (quarterly), the *Bulletin* (monthly), and the *Journal of the Pan-Pacific Research Institution* (quarterly).

The Pan-Pacific Research Institution

This Institution was organized by the Pan-Pacific Union in 1925 pursuant to resolutions passed at the first Pan-Pacific Food Conservation Conference, the carrying out of the plan being made possible by two of the directors of the Union, Messrs. George and William Castle, who placed property in Manoa Valley in Honolulu at the service of the Union for this purpose. Dr. David Starr Jordan was a guest and worker at the institute with representative scientists from Pacific lands during the organization period and was made president of the Institution.

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[36] For more detailed information, consult *The Pan American Union, Report to the Governments . . . on the work of the Union . . . 1910 to 1923* (United States Government Printing Office, Washington, D. C., Jan. 1923); *Pan American Union, Report on the Activities of the Pan American Union, 1923-1927* (United States Government Printing Office, Washington, D. C., 1927.)

[37] *The New York Times* (Sept. 25, 1928), p. 30. See also the *Handbook of International Organisations,* p. 158; *Mid-Pacific Magazine* (Jan., 1927), Vol. XXXIII, No. 1, pp. 13-17, and each issue of the *Bulletin,* p. 2.

This Institution not only publishes under the jurisdiction of the Pan-Pacific Union the *Journal of the Pan-Pacific Research Institution* but has as some of its objects the publication of a check list of the fish in the Pacific Ocean and the fresh waters of the Pacific lands, a check list of the insect and animal kingdom, and a directory of the research institutions and workers in the Pacific lands.

From time to time it is planned to call together conferences of scientists interested in some particular line of research work, and house those at the Institution for a sufficient length of time for them to secure satisfactory results. It is customary for the Secretary of the Interior, under whose direction are classed the affairs of the Territories of Hawaii and Alaska, to ask the State Department to transmit the invitations of the Union to the different countries of the Pacific through their ambassadors and representatives in Washington. This is done with the understanding that the conferences are not official or called by the United States Government, but that the invitations to take part in conferences are placed before the governments at the request of the Pan-Pacific Union.

At the present time the following councils have been organized in Honolulu in connection with the Research Institution, and it is expected that kindred councils may be organized in each Pacific land, where they may all work together: Aquatic Resources Council, Plant Constituent Council, Crop Development Council, Race and Population Study Council, Health and Sanitation Council, Pan-Pacific Botanical Garden Council, Animal Husbandry Council, Meteorological and Topographical Council, Pan-Pacific Legislative Council, Entomological Council, Pan-Pacific Science Council, and the Pan-Pacific Surgical Conference.[38] The chairmen of these councils constitute the board of directors of the Pan-

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[38] A Pan-Pacific Surgical Conference was called by the Union to meet in Honolulu, August 14-24, 1929, at the request of the Pacific Coast Surgical, Roentgenological, Oto-ophthalmological, Orthopedic, Gynecological Societies and the Hawaiian Territorial Medical Association. More than thirty Pacific countries were invited to attend, each being asked to send ten delegates. *Bulletin of the Pan-Pacific Union* (November, 1928), N.S., No. 106, pp. 3-10; (April, 1929), N.S., No. 110, pp. 3-11, 15-16; *The New York Times* (February 16, 1929).

Pacific Research Institution. Membership in the Institution is confined to actual research workers.[39]

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[39] For an account of the work of this institution and its various councils, see "The Pan-Pacific Research Institution," *Science* (Dec. 17, 1926), Vol. LXIV, No. 1668, pp. 587-589, and the various issues of the *Bulletin of the Pan-Pacific Union* and the *Journal of the Pan-Pacific Research Institution.* The reader also should consult the *Handbook of International Organisations,* pp. 156-158, for a brief description of the work of the *Pan-American Scientific Congress,* located at the Pan American Union, Washington, D.C., and dating back to 1898; the *Pan-Atlantic Union,* located at Vauves (Seine, France), and founded in 1917; and the *Pan-African Congress,* located at 70 Fifth Avenue, New York, and dating from 1921.

CHAPTER XVI

FEDERAL, STATE, AND MUNICIPAL RESEARCH

Research in the pure versus the applied sciences

It is quite the customary thing, particularly in the exact sciences, to divide research into two fundamental classes, pure and applied. Regarding the relative importance of each in the advancement of human welfare, there has been considerable controversy among those qualified to speak although there is no doubt that the general public in the past and present has bestowed its approval and favors upon the latter rather than upon the former. Research in pure science has been on the defensive constantly and has been handicapped because of lack of funds and scholars, whereas all manner of attention has been given to research in the applied sciences where the immediateness of results has been apparent to all. In recent years, however, a change in attitude has begun to manifest itself, undoubtedly due to the fact that the general public, including the business man, has begun to see the phenomenal results flowing directly from the prolonged, careful, and tedious research of scientists who have devoted their attention to the search for fundamental laws with which the general public felt it had little concern. Today it is not uncommon to find the question raised as to whether the results flowing from research in the pure sciences are not more far-reaching and more significant than are the results of the popularized applied sciences. That this is the case is practically beyond question if we consult the opinions of those eminent scientists qualified to speak upon the subject. Leading business men have perceived the same facts and as a result we witness a steady increase in the creation of research laboratories in which the pure scientist may work unmolested, unguided by those furnishing ample funds and equipment, and free to pursue his investigations in fundamental principles for uncertain and presumably distant results. Favored in this manner the results secured by such men have been remarkable. Enlightened business men, as well as the pure scientists, have become convinced of the wisdom of such procedure and as a result we are seeing and may continue to see an increase in the facilities placed at the disposal of men of pure science.

It is interesting and instructive to consider briefly the opinions of leading scientists regarding these questions.

Herbert Hoover, in an appeal for greater financial support for pure science, remarked: "While we have in recent years developed our industrial research upon a scale hitherto unparalleled in history, we have by no means kept pace in the development of research in pure science. We have an increase in some ten years from one hundred to over five hundred laboratories engaged upon search for applications of known scientific fact and law. These results have been magnificent. But all these applied science laboratories are dependent upon the raw material which flows from the other laboratories and men engaged in pure science. And the industrial investigators are the first to demand more support to pure science.

"Not only is our Nation today greatly deficient in the number of men and equipment for this patient groping for the sources of fundamental truth and natural law, but the sudden growth of industrial laboratories has in itself endangered pure science research by drafting the personnel of pure science into their ranks—depleting at the same time not only our fundamental research staff, but also our university faculties, and thus to some degree drying the stream of creative men at the source. Thus applied science itself will dry up unless we maintain the sources of pure science." [1]

Professor Levy-Bruhl, in contrasting pure research with the more practical research in technique, that is, the combination of practical aims and scientific means, commonly called applied science, remarked ". . . that such has been the profit and renown of these latter that the theoretical sciences find themselves a little in the shade. No one is responsible for this inversion of values.

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[1] Herbert Hoover, "The Vital Need for Greater Financial Support of Pure Science Research," *Reprint and Circular Series of the National Research Council, No. 65* (December, 1925), pp. 1-2.

In the present state of affairs it was not to be avoided: so many causes were leading to it. Pure theorists are fewer and fewer, compared with the growing number of workers in applied sciences. Beautiful discoveries in abstract sciences are nearly always out of the reach of the uninitiated, while achievements in applied sciences not only happen much more frequently, but also strongly appeal to the public imagination. And they seem to be so much more profitable! Every man in the country can appreciate the benefit of the wireless, the aeroplane and so many astonishing inventions—incredible wonders for our parents, commonplaces for our children. But how few can perceive that the recent discoveries pertaining to relativity, atoms, radio-activity and so on are more momentous and of wider consequences. Yet nothing is more true, and perhaps it is not untimely that public opinion should be reminded of it."[2] He continues: "All our engineering, all the huge mass of our multifarious industries has its root in the disinterested and purely theoretical research of a few men of sciences in a petty corner of the west, some twenty-four centuries ago. To their more practical contemporaries, very likely, they cut the figures of dreamers, queer and harmless people, idly poring over meaningless lines and figures. Thus history warns us against the temptation and danger of rating the rank and value of the various kinds of research according to their immediate and apparent usefulness. . . . Disinterested pursuit of truth, untiring struggle with the mysteries of nature are the lasting honor and dignity of our species. To give them up, even if they were practically useless, would be tantamount to losing what in us is preeminently human.

"But indeed pure science, far from being useless, is generally sure to become, in the long run, the most useful of all. . . . The potential utilities of disinterested research are unbounded and at first unmeasured. Therefore, though the most abstruse and theoretical science looks sterile, it is not."[3]

The distinguished scientist, Dr. Willis R. Whitney, in charge of one of the most important industrial research laboratories in this country, pointed out in 1917 that "the research work of a few Germans on the properties of catalysers, on the liquefaction of gases, and on the synthesis of ammonia from hydrogen and nitrogen has made their country independent of the world as to ammonia and nitric acid for fertilizers and explosives. And it is important to note that the score of steps along the line of this chemical research were separately taken by students of science as pure investigations of natural laws without reference to commercial gain. At the time when most of the data were obtained there was no apparent use for the information. Liquefaction of air was long a plaything. Oxidation of ammonia to nitric acid was particularly unpromising because the corresponding nitric acid was worth less than the ammonia. The direct union of nitrogen and hydrogen was well known to be slow and unpromising, and there was no sign that these component gases could ever be obtained as cheaply as could the ammonia itself from other sources. But the inquisitiveness of a few scientists as to the possibilities of speeding up slow chemical reactions, or of learning what would happen under new conditions, has in this particular case produced a resource without which Germany . . ." would have been compelled to conclude peace much sooner than was the case.[4]

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[2] L. Levy-Bruhl, "Research as It Is Today," *Science* (Nov. 19, 1926), Vol. LXIV, No. 1664, p. 485.

[3] *Ibid.*

Nathan Yoderblum, in addressing members of the Twelfth Congress on Physiology in 1926, stated in a summary manner what appears without doubt to be the consensus of opinion of leading scientists when he said ". . . the remarkable thing is that the usefulness of science to human life and civilization is not accomplished through any practical aim. It belongs to the secret of science that it serves the practical needs of life best in working with a purely theoretical view. . . . When a discovery has been made through the sole unprejudiced desire to know, it appears that life and humanity profit by it in a way that is most unexpected—perhaps epoch-making."[5] In further support and illustration of this contention it is worth while to quote again from

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[4] Willis R. Whitney, "The National Need for Scientific Research," *Yale Review* (1917), Vol. 6, pp. 613-614.

[5] Nathan Yoderblum, "On the Significance of Science," *Science* (Oct. 15, 1926), Vol. LXIV, No. 1659, pp. 371-372.

Herbert Hoover who has been in an admirable position to see and comprehend the significant developments in research. He has this to say:

"A special study in an industrial laboratory, resulting in the improvement of some machine or process, is of great value to the world. But the discovery of a law of nature, applicable in thousands of instances and forming a permanent and ever available addition to knowledge, is a far greater advance.

"Radio communication would have remained not merely impossible but wholly inconceivable except for the fundamental experiments of Faraday, the mathematical formulation of the wave theory by Maxwell, and the experimental realization of Maxwell's predictions by Hertz; successful advances in knowledge made without thought of immediate application or financial return. . . . No one can estimate the value to the world of an investigator like Faraday. Our whole banking community does not do the public service in a year that Faraday's discoveries do us daily. As national assets, men of his type, even when much less gifted than Faraday in the past and Millikan today, are beyond valuation, and no effort should be spared to facilitate their work." [6]

Certainly it is unnecessary to push the argument further. Examples may be multiplied to satisfy the most stiff-necked cynic; it would be difficult indeed to find any distinguished scientist willing to support the opposite view, although it be the one most appreciated by the general public. The fact that not only the general public but many of those anxious to endow research activities are slow to recognize these great truths naturally raises the pertinent question as to what is being done for pure research in the United States today.

Pure research in the United States

The technically trained men engaged in pure science have been placed in two principal groups: on the one hand, those supported in the great pure science research institutions, and on the other, those in our universities and those engaged in individual investigation. The number supported by our pure science research institutions, such as the Carnegie, Rockefeller, Smithsonian, and others, probably does not exceed five hundred technically trained men. Those engaged in pure science research in our universities or upon their own resources probably do not exceed five thousand, and most of these devote only part of their time to this work. And there are some men in our industrial laboratories who are engaged in pure science work. It is an interesting contrast that the scientifically trained personnel in applied science investigation today probably exceeds thirty thousand.[7]

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[6] *Op. cit.*, pp. 3-4.

Scientists engaged in fundamental or pure research are not supported adequately; this is still the case despite the general awakening to the value of their work as compared with that in the applied fields which are watched over with such solicitude. It is just as easy to support this contention as it is to support the preceding one relative to the value of pure research. It has been pointed out that, compared with other expenditures of far less importance to human welfare, the amount of money annually devoted in the United States to the aid of investigators and investigation in pure science is absurdly small. It is less than one-tenth of what we spend on cosmetics; the wealth of the country has multiplied much faster than the funds we have given for these pure science purposes and the funds administered in the nation today for it are but a triviality compared with the vast resources that a single discovery places in our hands.[8] It is pointed out further that in the advancement of fundamental scientific knowledge the United States occupies a position far in the rear of the majority of European nations. A list of the awards of the Nobel prizes to men of various nationalities reveals this, as does the fact that the number of first-rank investigators in the United States is far below what our population, education, and wealth would lead one to expect. This appears to be due partly to the fact that American civilization is only beginning to emerge from the pioneer stage and to the fact that scientists are drawn from poorly-paid academic positions to important industrial posts.[9] Dr. J. M. Cattell says Holland is contributing more to science in proportion to its population and wealth than the United States,

[7] Hoover, *op. cit.*, pp. 3-4.

[8] *Ibid.*, p. 6.

[9] *Ibid.*

Great Britain, or Germany.[10] It is his impression ". . . that the United States is in advance of Great Britain and Germany in the biological and geological sciences and in astronomy, behind them in physics, chemistry, and physiology, about on even terms with them in mathematics and the medical sciences." [11]

Dr. Robert A. Millikan, in the course of his effort to raise funds for a National Research Endowment for pure research, said: "In the application of science to industry the United States has always taken a leading place among the nations, and our industries may be counted upon to see that she continues to do so. But no such claim to leadership in the field of fundamental science can as yet be made for her. For the sake of our own intellectual development, for the sake of the diffusion of the spirit and the method of science among her people, and for the sake of the future of her material progress as well—fundamental science of today being but the applied science of tomorrow—her supreme need just now is for the stimulation of research in the fundamental sciences throughout the length and breadth of the land." [12]

The lack of financial support given to eminent scholars in pure research combined with the attractive salaries offered by large, far-sighted, and well-managed industrial laboratories, has tended to draw such men from universities, thus drying up the source of supply at its most vital point. Universities are almost invariably the source of training of research workers in every field of science. One of the most important functions of a university is to extend the bounds of knowledge and it must be recognized that productive scholarship is the usual test of the intellectual life of an institution. If this be true then it is important that universities be protected against the withdrawals of those who, in many cases, are their ablest investigators and teachers. Mr. Hoover presented the problem clearly when he said: "It is on the men in independent research and in our educational institutions that the great burden of scientific advancement must always rest, and from them that the inspiration of the younger generation of oncoming scientific workers is derived. What we need above all things is a better support of these men. They should not, by the necessities of living and the cost of equipment, be forced into our industrial laboratories. Those men who show an aptitude for research should be less engulfed in teaching. Often their productivity can be greatly aided by being released from teaching and administrative demands and endowed in research positions. Much can also be done by providing them with instruments, skilled assistants, measurers, computers, and stenographers, and all the aids that the nature of their researches and the most economical use of their time may demand. To attempt to herd them into great laboratories even for pure research is often their least useful service. To alter their mode of life and thought would merely result in the exhaustion at the source of the vital essence of their success. Moreover, the very researches which they prosecute and discoveries they achieve demand just such concentration of attention and originality of perception as their freedom tends to foster.

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[10] J. M. Cattell, "Scientific Research in the United States," *Science* (Feb. 12, 1926), Vol. LXIII, No. 1624, p. 188.

[11] *Ibid.*

[12] "National Research Endowment," *Science* (Jan. 1, 1926), Vol. LXIII, No. 1618, p. 11.

"There is no price that the world could not afford to pay to these men who have the originality of mind to carry scientific thought great strides—and they wish no price. They need opportunity to live and work. . . ." [13] Provost Josiah Penniman, of the University of Pennsylvania, in a similar strain, pointed out the value of retaining distinguished research men in universities due to the superior atmosphere which the university offers for pure research. He says: "There are two aspects of research; one of these is the work of research as a means of the solution of certain so-called practical problems, the other is research in general, the object of which, while it may incidentally prove to be practical, does not have practicality as its end and aim, but merely the increase of human knowledge. In the universities, perhaps alone, is to be found in its most complete expression the spirit of pursuing knowledge for its own sake. There also is to be found the complete circle of human knowledge. The chemist, the historian, the mathematician, the geologist, the philologist, preserve a breadth of vision and a sense of proportion owing to the fact that they are linked side by side in the same institution. Moreover the student in one field frequently finds in his own subject problems that require aid from the student in some other field. The universities, therefore, offer the best combinations of knowledge that are to be found in the world. . . . The achievements in applying science may be justly and generously credited with great accomplishments, but all achievements of applied science rest upon the work of men and women who were, for the most part, university trained, and interested in the fundamental laws of nature rather than in any practical application of them." [14] All of these things have been said many times by leading scholars. President Butler said it again in his address to the Columbia University students at the opening exercises of the 175th year of Columbia, although he has made similar observations many times before. He said: "The university is the natural home of those highly trained and eager minds who aim to advance knowledge. That divine curiosity which lies at the base of all intellectual progress is the university's driving force." [15]

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[13] *Op. cit.*, p. 4.

Fearing that fundamental scientific investigation in this country not only is waning but that the opportunities for pure research in this country are dangerously limited, two of the world's recognized astronomical authorities, Dr. Henry S. Pritchett, of New York, and Dr. George E. Hale, of Pasadena, California, have undertaken to promote and encourage research in the field of natural science. The National Academy of Sciences [16] appointed a group of twenty-six men selected from other fields such as the financial, diplomatic, legal, and philanthropic, to aid them in raising a fund of twenty million dollars for a national research endowment to further pure research.

The plan for the administration of this endowment is to determine who among the ablest and most productive investigators, engaged in effective research in pure science, are in need of assistance. They will be asked to present their plans of research to the trustees of the fund, stating their exact needs, such as more time for research, the aid of scientific assistants, computers or technicians as well as the special instruments or accessories which may be needed. Appropriations will be made to them for a fixed period of years, subject to renewal if circumstances warrant it. Dr. Robert A. Millikan said of this move to establish this endowment, ". . . I regard the attempt to establish a National Research Endowment for the above purpose as one of the most important national movements ever launched in the United States." [17]

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[14] Josiah H. Penniman, "Research and the Universities," *Science* (Dec. 24, 1926), Vol. LXIV, No. 1669, pp. 609-610.

[15] *The New York Times* (Sept. 27, 1928), p. 30.

[16] See below, pp. 432-433.

All of these distinguished scholars recognize that research is the price of progress and that it is of the utmost importance that it be fostered in every possible manner. The number of men who are competent to conduct scientific research of the highest order today is limited. The continued presence of such men in research, plus all the recruits which can be trained, is an imperative necessity if the nation is to progress.[18] Unfortunately the popular attitude of questioning the utility of pure science still continues though, it may be, with lessened intensity, and pure scientists even now often find themselves on the defensive. In the words of William Blum: "If . . . such an attitude induces indifference toward or even disdain for the application of the results of such researches to meet the needs of humanity, it creates a false distinction and not infrequently cuts off both the moral and the financial support that are essential to the conduct or success of exhaustive and fundamental research. Recognition of this fact is no doubt responsible for the frequency with which those interested and engaged in fundamental studies, which they urge 'for science's sake,' hasten to assure the public (or Congress) that 'besides, one can never be sure but that the most abstract research may lead to results of definite industrial or economic value.' " [19]

We shall direct our attention now to the various types of organizations which are fostering and furthering in this country not only these two types of research but especially research in the social sciences in an effort to determine the major developments which are taking place.[20]

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[17] "National Research Endowment," *Science* (Jan. 1, 1926), Vol. LXIII, No. 1618, p. 11. The plan is in charge of a board of trustees composed of leading scientific men of the day.

[18] See "Two Astronomical Authorities on the Waning of Pure Science Research in the United States," *Science* (Aug. 27, 1926), Vol. LXIV, No. 1652, p. 207.

[19] William Blum, "Science for Humanity's Sake," *Science* (July 23, 1926), Vol. LXIV, No. 1647, p. 77.

Research work of the Federal government

It is of course clear to the general reader that there is hardly a department, bureau, board, or commission of the Federal government which does not carry on some research.[21] Some of these,

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[20] To go far beyond general observations and summary pictures of the various organizations in research is not the purpose of the author. The recent appearance of Professor F. A. Ogg's *Research in the Humanistic and Social Sciences* (The Century Co., New York, 1928), a survey conducted for the American Council of Learned Societies, has made unnecessary any other type of treatment. Professor Ogg's work anticipated a considerable amount of the material which the present writer had compiled and had planned to present with respect to the status of research today in the field of the social sciences. The writer, as a result, changed his emphasis and approach to the subject in order to reduce to a minimum a duplication of results. The reader, therefore, is referred to that study of the facts which now may be omitted. No research worker in the social sciences can afford not to have Dr. Ogg's book on his shelf.

[21] For a list of the Federal government publications, consult Chapter VIII, pp. 173-175. The *List of Government Publications* is issued by the Superintendent of Documents, Washington, D.C. The best way to keep in touch with the publications of the Federal government is through the use of the *Monthly Catalog of the United States Public Documents* which lists most of the regular publications and the miscellaneous ones which appear month by month. To make certain that one is receiving all reports, the investigator should keep in touch with the various bureaus with whose work he is concerned. The proper price lists may be secured from the Superintendent of Documents. For example, No. 25 is on Transportation, No. 28 on Finance, No. 33 on Labor, No. 36 on Government Periodicals, No. 70 on the Census, etc.

In addition to the publications mentioned in Chapter VIII, the research worker should consult: (1) the *Report on the Statistical Work of the United States Government,* United States Bureau of Efficiency (U.S. Govt. Printing Office, Washington, D.C., 1922), which lists the statistical activities according to organization units, such as the Departments of Commerce, Labor, and so on. (2) The *Guide to Original Sources for the Major Statistical Activities of the United States Government,* United States Bureau of Efficiency (United States Govt. Printing Office, Washington, D.C., 1925), which furnishes the names of the branches of the government engaged in the collection of the data and the dissemination of the information under each subject covered by the statistical activities of the government. Thus under the heading "Accidents," government units which collect data are listed, together with the periodicity of publications. (3) Lawrence F. Schmeckebier, *The Statistical Work of the National Government,* The Institute for Government Research, Studies in Administration (The Johns Hopkins Press, Baltimore, Md., 1925). Although this book was mentioned in Chapter VIII, it is desirable to emphasize its usefulness to the beginner and general research worker. It is a most serviceable book since the various government publications are listed according to topics.

The most complete sets of government publications are to be found in the Library of Congress and in the library of the office of the Superintendent of Documents. The libraries of departments, bureaus, and independent establishments generally have complete sets of publications dealing with the subjects however, are far more outstanding than others in research. Of the ten departments, the most outstanding in research, both pure and applied, are the Departments of Agriculture, Commerce, Labor, Interior, and Treasury. The Department of State is involved in research only incidentally; the little research carried on by the War Department is done largely through the Board of Engineers for Rivers and Harbors and the Bureau of Insular Affairs; the Navy Department is relatively unimportant in research although it possesses an excellent library; the Department of Justice conducts no research; the Post Office Department is a routine business institution.[22]

It is practically impossible to determine the relative importance of government research activities even through a study of expenditures, since the expenditures for research are not segregated. About the best that one can do is rely upon such information as that given by Mr. E. B. Rosa in 1920. He says that, according to the national budget as it stood in 1920, only one per cent of the total expenditure was for research, education, and developmental work. "Of the fifty dollars per year per capita collected for all purposes, a dollar and a half per year per capita is spent for what is here called the primary functions of government; nearly as much more is put into public works, and fifty cents per year is put back into research, education, and developmental work to promote scientific research, to increase production and efficiency, to develop wealth, to promote the public health, and to conserve our national resources. . . . [One] is lead to wonder whether the total burden of taxation would not be lighter if the expenditure for scientific and developmental work were increased. . . ."[23]

One per cent of the total expenses of the government spent in

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with which they are concerned. There are also depository libraries which are entitled to receive one copy of every government publication, but complete sets are found only at the larger and more important institutions. A list of these libraries is given in the *List of Publications of the Department of Commerce Available for Distribution,* published annually by the Division of Publications of the Department of Commerce.

[22] See Ogg, *op. cit.,* Chap. XIV.

[23] Edmund B. Rosa, *The Economic Importance of the Scientific Work of the Government,* Address before the Washington Academy of Sciences (May 20, 1920), pp. 1-50. Mr. Rosa is Chief Physicist, Bureau of Standards.

constructive research work is a proportion entirely too small if any real consideration be given to the wide range and the great value of this type of work. Not only is constructive research work valuable and wealth-producing in peace times but it is an imperative necessity in times of war. Indeed it is one of the few agencies which can be built up for purposes of national safety and at the same time produce excellent results even if war never comes. The relative amounts spent for war, past, present, and future, ranging from 66 per cent to 98.4 per cent during the years, 1910-1924, and the constructive work of research, amounting to about one per cent in 1920, are a sad commentary upon the sense of values existing in a modern and supposedly civilized world.[24] The government, through an increased work in research, could render greater service not only to its citizens by aiding in scientific work but also to itself by increasing the total taxable wealth and by reducing costs. It is an important function of the modern state to aid a people in improving its conditions. Moreover, friendly government cooperation and constructive assistance are more to be cherished and approved than are government regulation and oppression.

The major branches of scientific work of our Federal government have never been concentrated or coordinated but have been left to the more or less accidental development within the various departments in which they might fall. As a result, there is a tremendous amount of duplication in work. In England, by contrast, governmental research has been gathered together in the form of the Department of Scientific and Industrial Research, under a single administrative head.[25]

The Department of Agriculture

One of the most important developments in the research of our Federal government is found in the Department of Agriculture, the greatest establishment of its kind in the world according to Professor Ogg.[26] Mr. Rosa points out that of the fifty cents per capita spent for research, education and development by the

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[24] See the *Annual Report of the Secretary of the Treasury for the Fiscal Year Ended June 30, 1927,* p. 20.

[25] George K. Burgess, "Governmental Research," *Transactions of the Royal Canadian Institute* (1921), Vol. XIII, pp. 123-124; Rosa, *op. cit.*, p. 21.

[26] *Op. cit.*, p. 309.

Federal government in 1920 nearly two-thirds are for the work of the Department of Agriculture. This he justifies, saying: "The Agricultural Department carries on a wide range of educational and experimental work in order to increase the production of farm products and to promote the interest of the farmer in his work, as well as to make life on the farm and in rural communities more attractive. This not only benefits the farmer but tends to keep food prices within reason for city dwellers. It is therefore serving all the people and its work was never so much needed as at the present time. . . ."[27]

While the research work in this Department originally was concerned largely with subjects in natural science, in recent years research has been extended into the fields of the social sciences. The bulk of the research work is collated in the Bureau of Economics which is divided into the following divisions, each doing important research work: Division of Agricultural Finance, Division of Agricultural Cooperation, Division of Land Economics, Division of Statistical and Historical Research, Division of Farm Population and Rural Life, and the Division of Information.[28]

The Department of Commerce

The Department of Commerce has become an outstanding agency of government research in recent years, the scope of the research has been broadened and the type of scholarship revealed has been raised to a high level. Particularly important is the work done by the Bureau of Foreign and Domestic Commerce. The work done in this Bureau is of the highest order, the mass of information which is gathered and assimilated is stupendous, and its value to the public incalculable.[29]

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[27] Rosa, *op. cit.*, p. 12.

[28] See Ogg, *op. cit.*, pp. 310-311, for a brief discussion of the work of each. The reader should acquaint himself with the *Journal of Agricultural Research* published semi-monthly by authority of the Secretary of Agriculture with the cooperation of the Association of Land-Grant Colleges and Universities (United States Government Printing Office, Washington, D. C.).

[29] The outstanding publications of this Bureau are (1) *Commerce Reports*, a weekly survey of foreign trade, reports from American Consular Offices and representatives of the Department of Commerce in foreign countries; (2) *The Survey of Current Business*, published since August, 1921, as a monthly; (3) *The Commerce Yearbook*, published annually since 1922; (4) *The Statistical Abstract of the United States*, published by this Bureau since 1911,

Another important bureau in the Department is the Census Bureau which also has extended, since 1902, the range of census research. It publishes a census of agriculture, of manufactures, an annual report on vital and financial statistics, and certain monthly reports like those on cotton. Census records are a valuable source of information and should be used more than they are for research purposes.

Two outstanding bureaus in this Department, particularly in the field of research in pure science, are the Bureau of Standards and the Bureau of Mines. They may be considered as great technical service bureaus to which the engineering, scientific, and technical interests of the country may apply for help in solving many of the underlying problems of general interest in mining, technology, engineering, physical and chemical science, and in standardization, on all of which progress in industry is based. The industrial research made by the government has been quite efficient and acceptable when compared with that done by commercial concerns. Had adequate salary scales been maintained during the recent period of rapid rise in prices it is doubtful if any commercial organization could approach the performance of the government laboratories.

The Bureau of Standards, which develops and maintains the standards of length, mass, volume, temperature, electrical and optical measurements, prepares standard chemicals and does many other kinds of fundamental work, has been preëminent in research for the government and for industries. More than half of its

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although the publication dates from 1878; (5) *Monthly Summary of Foreign Commerce*, published by this Bureau since 1914, although corresponding publications were issued by this Bureau from 1912 to 1914 and other bureaus from 1866 to 1912; and (6) *Foreign Commerce and Navigation of the United States;* published annually by this Bureau since 1912, although the publication dates from 1821. Each of the other bureaus has its own regular and special publications.

The reader, particularly the one whose interests lie in the fields of business, will find it worth his while to read *How to Use Current Business Statistics,* a pamphlet prepared by Mortimer B. Lane, Editor of the *Survey of Current Business* (United States Government Printing Office, Washington, D. C., 1928).

For a fuller discussion of the work of the Bureau of Foreign and Domestic Commerce, see L. F. Schmeckebier and G. A. Weber, *Bureau of Foreign and Domestic Commerce*, Institute for Government Research, Service Monographs of the United States Government No. 29 (Johns Hopkins University Press, Baltimore, 1924).

total expenditures are considered as made for the development of industries.[30] In 1920 the Bureau spent not more than fifteen cents per $1000 of the manufactured products (estimated value of total was twelve billion dollars) in all its work.[31] The Bureau has carried on research in an attempt to standardize building industries, in the standardization and testing of automobiles, in the study of gasoline and manufactured gas, in the engineering problems of public utilities, in the standardization of electrical batteries, in the testing of government supplies, in the standardization of textiles, in the various problems of the chemical industries, in the questions of the manufacture of scientific instruments, in questions of safety and the preparation of safety codes, in the problems of metallurgy, ceramics, and aeronautics.[32]

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[30] On the nature, functions, and organization of this Bureau, see Norman F. Harriman, *Standards and Standardization* (McGraw-Hill Book Company, Inc., New York, 1928); Gustavus A. Weber, *Bureau of Standards* (Institute for Government Research, Service Monographs of the United States Government No. 35 (The Johns Hopkins University Press, 1925). This Bureau dates from 1901. Its predecessor was the Office of Standard Weights and Measures.

According to Mr. Harriman (p. 107), the Bureau is a scientific and technical laboratory for service to the industries of the country and to the various departments of the government. "It has 10 major and 17 minor buildings, a staff of 850 persons, a library of 31,000 volumes, and 730 periodicals are received. Some 350 specialized scientists trained in physics, chemistry, and engineering are at work on problems involving the quality of materials and the testing of the commodities of commerce. There are 62 research associates from industry and 1,000 advisory committee experts from industry, and scientific, technical, and engineering societies. The Bureau is by far the largest institution of the kind in the world, and its annual budget is $2,500,000."

[31] Rosa, *op. cit.*, p. 15.

[32] For a discussion of each of these, see Rosa, *op. cit.*, pp. 28-40. See also George K. Burgess, "The Government's Laboratory and Industrial Research," *The Scientific Monthly* (1921), Vol. 13, pp. 523-530.

Manufacturers have not cooperated with one another in the past in standardizing designs as much as they could have done if there had been some practicable way of cooperation. They seem to welcome government cooperation in constructive work that benefits both them and the public.

The question of standardization has become of such importance that the American Engineering Standards Committee has been formed to promote engineering and industrial standardization. Five engineering societies and three departments of the government were represented initially in its membership, other societies having been added from time to time. Mr. Harriman, *op. cit.*, p. 95, gives the following list of agencies engaged in standardization work in this country: 191 trade and commercial associations; 17 professional and technical societies; 54 United States government bureaus; 81 state highway commissions and other state bureaus; 105 city government bureaus or departments; 5 national standardizing organizations; 2 American committees of international standardizing agencies.

Many of the activities of the Bureau of Standards in the field of industrial research have been started for the purpose of meeting government needs for information relating to improvements in manufacturing processes, standardization, and the formulation of specifications.[33] As illustrations we may cite the investigations relating to cement, concrete, paper, leather, rubber and textiles, for which small manufacturing plants have been installed. This Bureau, unlike the Bureau of Mines which is quite decentralized, has practically all its work concentrated in a group of laboratories in Washington. It has followed less generally than the Bureau of Mines the practice of entering into formal cooperative agreements with States and other bodies, public or private. But the director of the Bureau has never considered undertaking any problem in research relating to industry without first consulting representatives of that industry, either as a group through some organized body speaking for the industry or by consulting men of authority in the industry. In general, the Bureau works with committees representing certain industries or engineering societies. According to Burgess, "Hardly a day passes that there is not one, sometimes several, formal or informal conferences at the bureau by groups representative of industry who are interested in having the bureau undertake problems of research fundamental to their industry, and at those conferences the work to be done is usually mapped out at least on general lines and often in great detail." [34] Much is being done to eliminate waste. Research

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Four international conferences on standardization have been held. At the third, held in New York in 1926, eighteen countries including the United States were represented officially. The fourth was held in London in 1927. See "An International Organization for Standardization," *Science* (May 28, 1926), Vol. LXIII, No. 1639, p. 539, and Harriman, *op. cit.*, p. 186.

A recent account of the work of the Bureau by George K. Burgess appears in the *United States Daily* (July 24, 1929). The Bureau has announced the publication of a new publication called the *Commerce Standards Monthly*.

[33] On the trend of standardization, see Harriman, *op. cit.*, Chap. IX. One of the most valuable and enlightening collection of sources of information on the trends of standardization today is "Standards in Industry," *The Annals of the American Academy of Political and Social Science* (May, 1928), Vol. CXXXVII, No. 226. Part I is devoted to "Standardization Programs in Industry"; Part II to "Standardization Programs of Specific Industries"; Part III to "Standardization Programs Outside of Industry"; and Part IV to "Standardization and the Consumer."

[34] *Op. cit.*, p. 528.

is being made in the field of foreign trade particularly in the specification and testing of materials. There seems to be an increasing tendency, also, for industries to send men, called research associates or assistants, to work at the Bureau on problems that industry is interested in having solved and for which the equipment and atmosphere of the Bureau may be particularly suited. This practice was instituted by the Bureau largely in self-defense at a time when manufacturers were drawing men from it in alarming numbers and it also was coincident with the reduction of the bureau's funds.

As valuable as the Bureau of Standards is, the cost is but one cent per capita. This is cheap when one considers the great educational advantages of the laboratory in training men for research positions in industry and in solving some of industry's most important and fundamental problems.[35]

The Bureau of Mines in 1925 was transferred from the Interior Department to the Department of Commerce and consolidated with the division of mineral resources of the Geological Survey.[36] This Bureau gathers data relative to world-wide markets for mineral products, causes and modes of preventing mining accidents, and economic and sociological questions involved in most aspects of mining and quarrying. During the past few years the Bureau has been building up investigative work with outside cooperating agencies in a manner unique among Federal bureaus. These agreements have been made with States, universities, private or semi-private organizations. The outside organizations share part or all of the expense but the investigations are carried on under the direction of and according to the methods of the

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[35] Burgess, *op. cit.*, pp. 528-530.

[36] The same executive order of June 4, 1925, transferred the collection of mineral statistics from the Geological Survey to the Department of Commerce. The Geological Survey is a part of the Department of the Interior. An effort is being made to transfer the geodetic work of the Coast and Geodetic Survey, Department of Commerce, to the Geological Survey but considerable opposition has appeared from scientific schools, schools of engineering, and commercial organizations. See *Senate Bill No. 1913* and the *United States Daily* (Oct. 17, 1928), Vol. III, No. 192, p. 1.

For a fuller discussion of the work of the Bureau of Mines, see F. W. Powell, *Bureau of Mines,* Institute for Government Research, Service Monographs of the United States Government No. 3 (D. Appleton and Co., New York, 1922).

Bureau of Mines which retains the right to publish the results of all such investigations.

Due to the fact that the mining industry is scattered over a wide geographical area, the Bureau of Mines has established experiment stations for the local study of problems of the mining industry. This Bureau also is charged with the government work on fuels and with problems relating to process metallurgy. In its investigations relating to mineral technology and elimination of waste in metallurgical operations, this Bureau is doing much to abate the nuisance of smoke and fumes, to improve health conditions in shops, to improve furnace design and operation, and many other things of the same general nature.[37] The cost of this valuable Bureau, like that of the Bureau of Standards, is but one cent per capita per year. Both bureaus deserve more attention and support.

The Department of Labor

This Department by its very nature conducts many and extensive investigations. The most important fact-finding bureaus in the Department are the Bureau of Labor Statistics, the Children's Bureau, and the Woman's Bureau. Of these, the most outstanding is the first. Indeed it was around this Bureau, organized in the Department of Interior in 1885, that the Department of Labor was organized in 1913. This Bureau collects information relating to practically every aspect of labor such as wages, hours, earnings of men and women, relation of labor to capital, index numbers of prices, indexes of cost of living, strikes, lockouts, labor laws and court decisions, industrial accidents, workmen's compensation, women and children in industry, labor supply and productivity, as well as the means of promoting the material, social, intellectual, and moral well-being of the laborers. Data on most of these subjects are published regularly in the *Monthly Labor Review.*

The Children's Bureau, as the name would indicate, investigates and reports upon all matters pertaining to the welfare of children and child life among all classes of people. The chief divisions are the child hygiene; the industrial, concerned primarily with the study of State child labor laws; the social service, concerned principally with feeble-mindedness, illegitimacy, juvenile courts, vocational opportunities in industry; the maternity and infant hygiene division, which administers the Maternity Act of 1921; and a statistical division which not only carries on statistical studies of its own but supervises all statistical work of the Bureau.[38]

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[37] Burgess, *op. cit.*, pp. 525-526.

The Women's Bureau, which dates from 1920, formulates standards and policies which promote the welfare of wage-earning women, and attempts to improve their working conditions and efficiency, as well as advance their opportunities for profitable employment. In short, it is supposed to investigate and report upon all matters pertaining to the welfare of women in industry although the annual appropriation which limits the personnel of the Bureau to fifty restricts the work of the Bureau.

The Department of the Interior

This Department does not rank as high in research as the preceding ones. Some of its research falls into the class of pure research, some of it is social in nature. One of its most important research bureaus is the Bureau of Education which publishes many bulletins and pamphlets on outstanding educational questions. Of particular interest to college students are the studies on occupational opportunities for college students. The Bureau has a library containing over 100,000 volumes and pamphlets devoted exclusively to educational subjects which is the largest collection of its kind in the world. This material is accessible to research workers through a loan system. Extensive bibliographies on educational subjects also have been prepared.[39]

The Pension Office and Public Land Office cannot be said to carry on research. The Bureau of Reclamation conducts investigations into the economic and agricultural possibilities of arid lands, and the financial and social problems of the people who are developing them. The results of these investigations appear in annual and special reports and in the monthly *The New Reclamation Era.*[40]

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[38] The activities of the Division of Conciliation (now the United States Conciliation Service), the Bureau of Immigration, the Children's Bureau, the Bureau of Naturalization, the Women's Bureau, and the United States Employment Service have been described in various Service Monographs of the United States Government, by the Institute for Government Research at Washington, D. C.

See also Laura A. Thompson, "The Library of the United States Department of Labor," *Monthly Labor Review* (March, 1926), Vol. XXII, No. 3, pp. 541-546.

[39] Ogg, *op. cit.*, p. 308.

The Treasury Department

This Department, relatively, is not an important research division as such; its research assumes largely the form of gathering and collecting financial statistics which appear in annual and other periodical reports, such as the *Annual Report of the Secretary of the Treasury,* the *Annual Report of the Comptroller of the Currency,* the reports of the Commissioner of Internal Revenue, the reports of the Income Tax Unit, the Director of the Mint, the Farm Loan Bureau, and the reports of the Public Health Service.

The research work of the Public Health Service is important. Mr. Rosa insists that it is one of the most important of the agencies doing work of research and education.[41] It maintains supervision over incoming vessels to prevent the introduction of diseases, and to prevent the spread of diseases among the States by means of inspections and cooperation with the State Departments of health; it collects and interprets statistics of diseases; it carries on research to develop preventive methods. It has formulated a comprehensive health program to be carried out on a nation-wide scale by the active cooperation of Federal, State, and local authorities, and voluntary organizations. In addition, it carries on a large amount of work in the care and rehabilitation of sick and wounded soldiers.

Federal institutions, commissions, boards, and miscellaneous agencies

There are many independent executive establishments which are doing important and scholarly research. The outstanding ones are the Library of Congress, the Smithsonian Institution, the Interstate Commerce Commission, the Federal Trade Commission, the Federal Reserve Board, and the Tariff Commission.[42] The work of these will be reviewed briefly in the order mentioned.

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[40] See also *General Information Regarding the Department of the Interior, July 1, 1927,* United States Department of the Interior (United States Govt. Printing Office, Washington, D. C., 1927).

The activities of the General Land Office, the Office of Indian Affairs, the Bureau of Pensions, the Bureau of Education, the Geological Survey, the Reclamation Service (now the Bureau of Reclamation), and the National Park Service have been described in various ones of the Service Monographs of the United States Government, by the Institute for Government Research at Washington, D. C.

[41] *Op. cit.,* pp. 22-23.

The Library of Congress

This Library, which originated by an Act of Congress in 1800, has grown until its collection of books and pamphlets is the largest in the western hemisphere and the third largest in the world.[43] It is our national institution corresponding to the British Museum and the *Bibliothèque Nationale.* Toward it our government has manifested a generous policy. It is a marvellous institution in every respect both for the research which is conducted by it and for the wonderful facilities made available to the research worker. Its collection of books and pamphlets has reached 3,500,000 titles and the total number of items of all kinds in the library now exceeds six millions. One large factor contributing to the growth of the library is due to our Copyright Law which requires that two copies of every book or other publication be deposited gratis with the Library. The present rate of growth is about 120,000 items per year.

The Library, by law, is a part of the legislative branch of the government, and the librarian, although appointed by the President, reports to Congress. The Library's main collections are strongest in bibliography, history, political, economic, and social science, public law and legislation, the fine arts, American history, biography, and genealogy. It has many valuable collections of books and documents, both foreign and domestic, the foreign publications being collected yearly through the International Exchange Service.[44]

In addition to six service divisions there are twelve research divisions: (1) Bibliography, (2) Manuscript, (3) Maps and Charts, (4) Documents, (5) Legislative Reference with sections devoted to (a) American law, (b) foreign law, (c) economic, statistical, and historical matters, and charged with collecting, classifying, and indexing material likely to be serviceable to Congress, (6) Law Library, (7) Prints, (8) Music, (9) and (10) Semitic and Slavic, (11) Smithsonian, in charge of about one-half of the Smithsonian Institution's scientific library, and (12) Periodical.

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[42] A tabular chart of the organization of the executive departments and establishments with the proposed transfers, as of 1925, will be found in C. A. Beard, *American Government and Politics* (The Macmillan Co., New York, 1925), 4th ed., p. 308.

[43] See *The Library of Congress and Its Activities* (Washington, D.C., 1926) and *Library of Congress Special Facilities and Regulations for Research* (United States Govt. Printing Office, Washington, D. C., 1928).

[44] See Ogg., *op. cit.*, pp. 370-371, for a list.

The Library of Congress is open to persons engaged in serious research. The widest and freest possible use of the Library consistent with safety and the convenience of Congress is permitted. Access to the stacks is possible for research workers; work tables, where books continuously in use may be kept, are provided, with accommodations for the use of typewriters; and experts in various fields of learning are attached to the staff and stand ready to serve as advisers. There are consultants in bibliography, history, geography, music and other subjects. In addition, two new "chairs" have been established, one in fine arts, one in American history.

The Library also has developed a system of cooperation between the different libraries of the country. By a system of inter-library loans the material in the Library of Congress is placed at the disposal of responsible investigators all over the country. Through indexes in large local libraries the research worker can determine the materials wanted and these may be borrowed through the local library which guarantees the responsibility of the research worker. This system saves much time and expense for the local research worker.[45]

The Smithsonian Institution

This Institution owes its existence to a legacy left by an Englishman, James Smithson, in 1829 and accepted by the United States in 1846 after the donation had been offered to England but rejected by that country because of its indefinite terms.

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[45] For further discussion, see Ogg, *op. cit.*, pp. 371-373; "Private Gifts Enrich Library of Congress," *The New York Times* (Dec. 11, 1927); and James B. Wilbur, "Citizens Help to Build Congressional Library," *The New York Times* (Nov. 11, 1928).

Smithson wished his name to live on so left the legacy for the increase and diffusion of knowledge among men. Questions at once arose as to the terms "increase" and "diffusion" of knowledge. It was not clear whether the Institution was for research work or for a museum. Joseph Henry, who was appointed secretary, submitted a program to the Board of Regents in order to clarify the terms. Knowledge was to be increased by stimulating men of talent to make original researches by offering rewards for papers containing new truths and by the annual appropriation of the income for particular research under the direction of suitable persons. Diffusion of knowledge was to be secured by publishing periodically reports on the progress of different branches of knowledge and by the occasional publication of separate treatises on general subjects.[46] This program was adopted by the Board of Regents.

The Institution is established at Washington, D. C., and the President of the United States is its president *ex officio*. The Board of Regents includes the Vice-President of the United States, the Chief Justice of the United States Supreme Court, three members of the Senate, three from the House, and six other persons; and the Secretary of the Institution is President of the National Museum, which is maintained out of Federal funds.

The one-time secretary, Joseph Henry, developed the system of International Exchange of Publications which dates from 1850 and which has for its object the establishment of a free exchange of publications between men of science in the various parts of the world. It is in communication with nearly 50,000 correspondents, two-thirds of whom reside outside the United States. In 1867, Congress, for the benefit of its Library, instructed the Institution to exchange fifty series of all official publications (the number was increased to 100). A treaty concluded in 1889 between the United States and other countries settled the question of the exchange of scientific and official publications. This service has already been of extreme value to scientists and has contributed largely to the development of American libraries;

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[46] Henri Reverdin, *United States of America, The Principal American Foundations,* League of Nations, Committee on Intellectual Cooperation, Brochure No. 11 (Imprimeries réunies, Chambéry, 1923).

by undertaking to defray the cost of such publications, it has enabled societies and scholars to save considerable sums for their own research work. For the fiscal year ending June 30, 1922, for example, 344,848 parcels were sent from the United States and 38,309 received.[47]

The first assistant secretary, Charles C. Jowett, devoted his entire attention to the catalog and bibliography. Secretary Henry also took a great interest in the work and at his suggestion the Royal Society in London began its catalog of scientific articles, which since has become the International Catalogue of Scientific Literature. This Catalogue was founded in 1900 with the object of providing investigators with a means of keeping in touch with scientific progress throughout the world, through the medium of an authors' and classified subject index to current literature in pure science. The collection of material was intrusted to some 33 regional bureaus, under the control of a Central Bureau in London, which edited and published the Catalogue.

Work was begun in 1901. The Catalogue was issued for fourteen years, 1901-1914 inclusive. Each issue contained approximately 250,000 references. It consisted of a series of volumes, one for each branch of pure science, of which some 240 volumes were published.

The war finally caused the suspension of publication. From the outset it hindered the collection of material and the securing of subscribers. Publication of the issue for 1914 continued until 1921, but publication was then suspended because of the inability of the foreign bureaus to continue financial support. However, almost all the regional bureaus have continued the collection of material pending the resumption of publication. They are supported for the most part by governments. It is hoped to secure funds to permit the publication of the accumulated material and regular publication thereafter. The regional bureau for the United States is maintained by the Smithsonian Institution.[48]

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[47] Reverdin, *op. cit., passim.*

[48] The status of the Catalogue is reported annually in an appendix to the *Annual Report of the Secretary of Smithsonian Institution* (United States Govt. Printing Office, Washington, D. C.). See particularly the reports for 1920, pp. 108-111, and 1926, pp. 119-121. The report of the Secretary also is found in the *Annual Report of the Board of Regents of the Smithsonian Institution* (United States Government Printing Office, Washington, D. C.).

The Institution possesses a research and a working library. The latter contains more than 300 American or foreign periodicals. There is no clause to limit the number of subjects of research and it publishes papers on anthropology, astronomy, ethnology, botany, geology, paleontology, meteorology, magnetism, physics, physiology, philology, and similar subjects. The publication of these series of papers has led to a very active correspondence with the learned societies. The following are its principal publications: Annual Reports submitted to Congress by the Regents; the Smithsonian Contributions to Knowledge; the Smithsonian Miscellaneous Collection (about 30,000 pages); the Bulletins of the National Museum (since 1878); the Annual Reports of the Bureau of American Ethnology; the Bulletins of the Bureau of American Ethnology; the Annals of the Astrophysical Observatory; the reports of the Historical and Patriotic Societies. The history of the Institution during the first fifty years of its existence was published in 1897.[49]

Secretary Baird, who succeeded Henry, devoted his efforts to the development of the museum, for which he had a building erected. He also supervised the building of the vessel *Albatross* for purposes of scientific exploration. Secretary Langley, who made experiments in aviation, did much to foster the National Zoological Park and the Astrophysical Observatory. The Park, established by Congress in 1890, is designed to preserve from total extinction American fauna which is disappearing rapidly from the continent. The Observatory, also created in 1890, is for research work dealing with the solar spectrum and organizes expeditions for the purpose of observing eclipses of the sun. The National Art Gallery also is attached to the Institution. A bureau which does outstanding research is the Bureau of American Ethnology. Attached to the Institution since 1879, it has done much research work on the language, habits, customs, organization, and mythological conceptions of the Indians. The Institution is one of the foremost research agencies in the fields mentioned.[50]

[49] George Brown Goode (Ed.), *The Smithsonian Institution, 1846-1896, The History of Its First Half Century* (De Vinne Press, City of Washington, 1897).

[50] Reverdin, *op. cit.*; Ogg, *op. cit.*, p. 318.

The Interstate Commerce Commission

This commission, created in 1887 to enforce the Interstate Commerce Act, conducts a considerable amount of valuable research, the results of which appear in the Commission's various reports such as its accounting bulletins, annual reports, conference bulletins, decisions, and statistical publications relating to railways, express and telephone companies, tariffs, and related subjects.[51]

The Federal Trade Commission

This body, created in 1914 to enforce the anti-trust acts, conducts research in a wide variety of subjects relating to the businesses which come within the scope of its authority. The Commission conducts investigations into the organization, business, conduct, practices, and management of any corporation engaged in interstate commerce except banks and common carriers; it investigates trade conditions and organizations in foreign countries and a wide variety of subjects like anthracite coal, gasoline, cotton merchandising practices, war-time profits and costs of the steel industry, the grain trade, wealth and income, bread and flour, the electric power industry. Most of this information is gathered by the Economic Division which has built up a valuable library of books and pamphlets on the economics of trade and industry. The various reports and findings are published either by the Commission or by Congress.[52]

The Federal Reserve Board

This Board, also created in 1914, was empowered to supervise the affairs of the Federal Reserve System. It conducts most of its research activities through the Division of Research and Statistics which gathers data on practically every aspect of banking both at home and abroad and publishes the results in the monthly *Federal Reserve Bulletin* and in the *Annual Reports of the Board.* It also publishes at irregular intervals the *Digest of*

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[51] Joshua Bernhardt, *The Interstate Commerce Commission, Its History, Activities and Organization,* Institute for Government Research, Service Monographs of the United States Government No. 18 (The Johns Hopkins University Press, Baltimore, Md., 1923).

[52] W. Stull Holt, *The Federal Trade Commission, Its History, Activities and Organization,* Institute for Government Research, Service Monographs of the United States Government No. 7 (D. Appleton and Co., New York, 1922).

Rulings of the Federal Reserve Board.[53] In the field of money and banking these publications of the Board provide our best and most authoritative information.

The United States Tariff Commission

The Tariff Commission was created in 1916 to conduct studies on tariff questions and submit evidence to Congress and the President as a basis for tariff legislation. It publishes annual reports, miscellaneous pamphlets, and special studies such as the *Tariff Information Series, Tariff Information Surveys,* and the *Tariff Dictionary.*[54]

Cooperation in research between Federal and non-Federal agencies

Among the means used by the Federal government to advance science is the cooperation of its scientific bureaus with corresponding departments or bureaus of the State governments, with industrial organizations, and with various other associations. In order to recognize the principles which should guide in such cooperative work, the National Research Council in 1921 appointed a joint committee of its Division of Federal and State Relations to examine the nature of the cooperative scientific work carried on between Federal and non-Federal agencies. In this survey of cooperative scientific work, data were collected from some twenty-three bureaus and independent establishments of the government, representing the Treasury, Interior, and War Departments, the Department of Agriculture, and the Department of Commerce.[55]

It was found that the cooperation represented great diversity as to types of work, the agencies cooperating, the nature of the cooperation, the terms of the agreement, and the extent of the participation of the parties to it. The 553 separate cooperative projects in which the government was a partner were found to include more than 1,100 cooperative undertakings, since many projects, such as the study of a plant disease, the collection of statistics, or the conduct of rural health propaganda, involved several cooperators with each of whom separate arrangements were made. Of the 553 separate projects, 360 fell under research, one-fifth were in the nature of routine testing, and twenty-eight applied to the gathering of statistical information.

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[53] The latest edition is that of 1928 and includes not only rulings but regulations of the Board and of the Comptroller of the Currency, the Federal Reserve Act, and the National Bank Act.

[54] See F. W. Taussig, *The Tariff History of the United States* (G. P. Putnam's Sons, New York, 1923), 7th ed., pp. 481-489; Ogg, *op. cit.*, p. 320; Joshua Bernhardt, *The Tariff Commission,* Institute for Government Research, Service Monographs of the United States Government No. 5 (D. Appleton and Co., New York, 1922).

[55] E. W. Allen, "Co-operation with the Federal Government in Scientific Work," *Bulletin of the National Research Council* (Dec., 1922), Vol. V, No. 26, Pt. I, pp. 1-27. Mr. Allen was Chairman of the committee which made the report.

The United States Department of Agriculture had the largest number and widest range of cooperative undertakings; the Bureau of Mines reported some forty cooperative projects; the United States Public Health Service was engaged in twenty-three;[56] the United States Geological Survey showed a considerable list; the Bureau of Standards was carrying on various kinds of tests for private concerns; the Bureau of Fisheries was assisting the fish industry through its cooperative fish hatcheries.

The oldest example of cooperation of which record has been found is that for the collection of agricultural statistics, dating back to 1866. In 1921 approximately 200,000 volunteer crop reporters were supplying the Department of Agriculture with estimates of acreage, condition, and probable yield of various crops, as well as data regarding farm live stock, labor conditions, and other agricultural matters. This service is rendered without salary or remuneration other than certain publications and seeds. With this cooperation this Department has built up what is said to be the most efficient crop-reporting system of any country. The Federal government also cooperates with the States in the maintenance of research at agricultural experiment stations and the conduct of agricultural extension teaching on a national basis. Then there is the government's cooperation in road building, carried out with the joint support of the Federal government and the States and supervised by the Department of Agriculture, the building and reclamation works for irrigation in the West, the management of the forest reserves, and many other activities that would make a substantial list.[57] It was estimated that for a single year about $41,000,000 was spent for such work, of which amount the Federal government spent about $14,000,000, the outside agencies about $27,000,000. Considering all the contributions made by the Federal government, it was concluded that it contributed about one-third and its cooperators about two-thirds of the total expense.

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[56] On cooperative research in public health, see also William C. White (U. S. Public Health Service), "Cooperative Research—The Plan of the National Tuberculosis Association," *Science* (Sept. 17, 1926), Vol. LXIV, No. 1655, pp. 265-269.

It appears that in carrying on scientific work of various types cooperation has become a recognized principle of our government. The leading purpose has been to provide for scientific investigations of general interest on a national or regional basis and to promote national movements in activities that are conducive to the general well-being. At the same time it appears to have had a tendency to minimize a centralized dominance in scientific effort by stimulating local initiative. Little evidence has been found of the standardization of procedure in cooperative undertakings and this makes generalization difficult. It is found however that States and localities have not been reluctant to assign funds or other assistance to an enterprise to be guided by experts from the outside, just as Congress has not hesitated to appropriate money for cooperative undertakings in the States without questioning where the actual leadership was to lie, provided the money was employed for the purpose designated. There is evidence of a growing liberality on both sides, with recognition of the true spirit of cooperation and regard not only for the rights of each but for the proprieties and the mutual advantages. In the words of Mr. Allen: "The scientific work which the government, the states, and local institutions are called upon to perform is so vast and so varied that it is beyond the ability of a local or national agency to accomplish, working alone. Much of it is regional or national in importance, or is for the benefit of science as a whole. To prevent its being fragmentary and disconnected, systematized effort is manifestly important. A close relation between agencies for research minimizes the tendency to collect local facts without broad interpretation; leads to greater uniformity or conformity of effort, permitting results to be more readily fitted together and harmonized; and enables the making of a more comprehensive and complete attack."[58]

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[57] Mr. Allen lists some seventy different agencies that were found cooperating with the Government in 1921. For a discussion of the forms and terms of cooperation, the questions of initiative and participation, and the volume of cooperative funds, the reader is referred to Mr. Allen's report, pp. 11-21.

The government can render valuable service, also, by cooperating more with the smaller business men who cannot afford the type of extensive research organization utilized by the larger ones. Few believe that the success of the small business is not vital; and when the government, through cooperative efforts, renders aid to such concerns in industrial research, it is rendering a valuable service to the public. It can accomplish much through research in standardization in cooperation with manufacturing associations and engineering societies, and nothing promotes economy and efficiency in the use of materials more than intelligent standardization. The burden of such work distributed over a hundred million people is very light and the benefits would far outweigh the costs.[59]

Research by State governments

Information is not readily available which gives accurate data as to the status of research in each of the States. The only studies that have been made have been confined to a few States which we must trust to serve as representative samples of the forty-eight. Professor Leonard D. White of the University of Chicago made such a study for the Division of States Relations of the National Research Council representing conditions as of February, 1924, covering the States of Illinois, Wisconsin, Ohio, and Massachusetts.[60]

According to his study, State research lags far behind industrial research although there appears to be little evidence of hostility toward research expenditure on the part of the administrative or legislative bodies. Nevertheless, while the annual expenditure for research in the principal industrial laboratories is computed in terms of millions of dollars, State research is figured in terms of thousands of dollars. And while great corporations have accepted industrial research as an indispensable element in their business organization because it shows a direct financial return, such direct return is not so obvious to the States.

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[58] *Op. cit.*, p. 25.

[59] See Rosa, *op. cit.*, pp. 41-42, in support of this view.

[60] Leonard D. White, *An Evaluation of the System of Central Financial Control of Research in State Governments*, Bulletin of the National Research Council (Dec., 1924), Vol. 9, Part 2, No. 49, pp. 1-134. Partial summaries of this study appear in the *American Political Science Review* (Feb., 1925), Vol. XIX, No. I, pp. 38-50, and with additional material in "Scientific Research and State Government," *Reprint and Circular Series of the National Research Council, No. 61* (Feb., 1925).

These four States apparently had no clearly defined policy with regard to the extent to which scientific investigation should be undertaken or with regard to the conditions under which it should be prosecuted. There was no segregation of funds for scientific research, no accounting in terms of research projects under way, no summary of results achieved, no correlation of work or workers, no plan for future projects, and no effective machinery for making such plans on a comprehensive scale. These governments seemed to be drifting along as one incident or another happened to bring about the establishment or abandonment of scientific work. Some of the scientific divisions, naturally, had carefully matured plans, but no State as a whole had such a plan.

It appeared that the States in the long run were willing to support research to the extent that legislators, governors and men prominent in public life understood its value and urged its support. As one would expect, legislators are prone to evaluate the scientists more according to their personality than according to their scientific contributions. Scientists often are not good advertisers and as a result fail to secure interest in and support for their work.

The lack of continuity of State governments is another factor which militates against successful research. There is danger also in the type of censorship which any central board might exercise. Professor White thinks that if such boards are to censor the final manuscripts they should assume responsibility for selecting the research projects out of which they arise; and he recommends that there be an advisory board drawn from the field covered by a government laboratory, composed of men technically qualified and appointed for long terms of years, to suggest lines of inquiry and at the same time serve as a buffer between the laboratory and the administrative officials who are inclined to meddle unwisely.[61] For this purpose he suggests a comprehensive State scientific council composed of affiliated scientific and engineering societies. The wisdom of this plan must be apparent to all.

Maine has recently embarked on a research enterprise which other States may find it advisable to follow. As a basis for sound legislation and for the purpose of coordinating the activities of the business community, the State, through its Development Commission and in cooperation with certain important research organizations, is undertaking what experts insist is the most comprehensive survey ever attempted by any State in the Union. By means of this survey Maine expects to ascertain precisely what her natural resources are, along with the advantages and disadvantages of her climate. Experts will check her industrial resources, including the available supply of skilled and common labor, the problem of fuel, power resources, the proximity of the power to raw materials and markets, and transportation facilities by rail, water, and highway. Research will be extended also to taxes, labor turnover, attitude of labor unions, seasonal demand for labor, restrictive State and national legislation, causes affecting the migration of industry, conditions of trade, including both wholesale and retail establishments, their markets and sources of supply, financial conditions, banks and trust companies, the definite location of areas suitable for factory development and trade centers, the cost of food, rent, and clothing, housing, labor supply, schools, colleges, parks, recreational facilities, churches, hospitals, hotels, sanitary conditions, water, general health of communities, and the topography of the land.

Cooperating in the survey are the various departments of the State government, the colleges, the New England Council, the United States Chamber of Commerce, the Federal Department of Commerce, the National Research Council, the Massachusetts Institute of Technology, the Associated Industries of Maine, the Maine State Grange, and the State Chamber of Commerce.

Out of this huge operation, Maine hopes to obtain a complete plan for fostering industries in the State and for determining how the community and the State can best help existing industries and encourage new ones, so as to provide a reasonable diversification to stabilize economic conditions.[62] Such a procedure is logical and sensible and if Maine accomplishes her purpose she will have set a high and desirable standard of procedure for other States to follow.

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[61] White, *op. cit.*, p. 121.

Municipal research

The vague term "municipal research" has been used purposely in order to include a wide variety of research activities concerned with municipal affairs.

Research in municipal government and activities had its origin, generally speaking, in attempts by various citizens' organizations to rescue their respective city governments from corrupt politicians. The Committee of Seventy, created in New York City in 1871 to overthrow the Tweed Ring, may be taken as a conspicuous example of the beginning of the reform movement in municipal government. While this particular organization soon expired after the Tweed crisis had passed, it was followed by other reform organizations both in New York City and elsewhere. Research in one form or another was carried on by these reform bodies and, since those early steps, has been growing steadily in importance. In fact the organizations are so multitudinous and varied at present that it becomes difficult to give an adequate picture of them and their work.

For convenience of treatment these organizations may be classified as follows: (1) city clubs, (2) local organizations created to distribute political information, (3) local organizations created to endorse candidates for municipal office, (4) local bodies which are municipal political parties in nature, (5) genuine municipal research bureaus, (6) those research bureaus whose activities are extended beyond local affairs and are of more or less national importance, and (7) university bureaus.[63] There appears to have been no clear chronological development in these various forms. They are class types, not historical types.

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[62] *The New York Times* (April 22, 1928).

[63] See also Thomas H. Reed, *Municipal Government in the United States* (The Century Co., New York, 1926), pp. 104-105. Another method of classification sometimes made is on the basis of financial support. See *Twenty Years of Municipal Research,* a pamphlet (Governmental Research Conference, New York City, 1927), pp. 8-9.

(1) *City clubs as municipal research organizations.* In New York City, for example, after the dissolution of the Committee of Seventy, an effort was made to create a more permanent organization to watch over the municipal government. In 1892 the City Club of New York was organized for this purpose and included a series of committees appointed to inform themselves on various aspects of city affairs. Most of the city clubs in existence have been and are a strong force for good and employ trained secretaries to conduct their work. The social activities of the clubs doubtless overshadow their research work yet considerable is accomplished through the appointment of committees to study important questions, through the irregular publications which appear, and through the various speakers' forums which are conducted for the benefit of the attending members. Ordinarily these clubs do not take sides officially on political questions but attempt to present all aspects of the controversies and trust to the good judgment of the voters. As research organizations, however, they are of minor importance.

(2) *Organizations which distribute municipal political information.* The organizations which attempt to secure reform by distributing political information are typified by the Municipal Voters League organized in Chicago in 1896. It studies and publishes the records of prospective candidates and approves or condemns them accordingly.

(3) *Municipal endorsing organizations.* These go a step farther and endorse a "slate" chosen from among the nominees of all parties. The Library Hall Association of Cambridge, Massachusetts, according to Professor Reed, "was one of the first organizations to adopt this method and long employed it most successfully."[64]

(4) *Municipal political party organizations.* The Citizens Union of New York, organized in 1897, is of the municipal political party type. It not only investigates and follows carefully the conduct of city authorities but also publishes annually the record of the members of the legislature from New York City, especially with regard to legislation affecting the city. Of the same

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[64] *Op. cit.*, p. 105.

general nature is the Political Research Bureau of the Republican County Committee of New York.[65]

(5) *Genuine municipal research bureaus.* (a) *The New York Bureau of Municipal Research.* The present activities of the bureaus interested in good city government are concerned more with genuine research than were those of the earlier reform organizations. The more modern kind of organization is typified by the New York Bureau of Municipal Research which is really the parent or model of the organizations of this kind.

In 1906 New York City organized the first bureau really devoted entirely to municipal research. At that time it was known as the Bureau of City Betterment and was organized as a division of the Citizens Union of New York City. In 1907 it was incorporated independently as the Bureau of Municipal Research and continued as an independent organization until 1921 when it was taken over by the National Institute of Public Administration although its legal existence was not extinguished.[66]

The stated objects of the Bureau are ". . . to promote efficient and economical government; to promote the adoption of scientific methods of accounting and of reporting the details of municipal business with a view to facilitating the work of public officials; to secure constructive publicity in matters pertaining to municipal problems; to collect, to classify, to analyze, to correlate, to interpret, and to publish facts on the administration of municipal government." [67] These objects have been carried out with such marked success that the agency has been viewed in a very favorable light by the public.[68] A Training School for Public Service was organized in 1911 and placed under the control of the Bureau in order to prepare men and women for government service as executives and investigators, and for quasi-public service as staff members of newly organized bureaus of research, citizens' organizations, and other civic groups.[69]

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[65] Regarding the latter organization, see Ogg, *op. cit.*, pp. 215-216.

[66] Luther Gulick, *The National Institute of Public Administration* (The Nat. Inst. of Pub. Admin., New York, 1928), and George B. Hopkins, "The New York Bureau of Municipal Research," *Annals of the American Academy of Political and Social Science* (May, 1912), Vol. LXI, No. 130, Pt. 3, pp. 235-244.

[67] *Twenty Years of Municipal Research*, pp. 5, 9.

[68] During the earlier stages of its career, particularly in 1909, when it stirred up virulent opposition through its attacks upon what it considered corrupt city government, it was called the "Bureau of Municipal Besmirch." Gulick, *op. cit.*, pp. 17-18.

Such free advertising merely acted as a sounding board for the Bureau and the "Municipal Research Idea" attracted attention throughout the country.

The New York Bureau was the first institution in this country to apply scientific methods of research to the problems of public administration with a view to effecting improvements in government. It made the first general surveys in municipal, State, and Federal administration, and conducted the survey which resulted in the creation of the first centralized public agency to deal with the health of children—the Bureau of Child Hygiene of the New York City Health Department. It led the way in advocating public budget systems in this country both from the standpoint of public education and budget technique. It developed standards of civil service administration, public purchasing, and governmental accounting, and introduced unit costs and objective tests of administrative efficiency in government. It has been responsible in a large measure for the application of standards in public personnel, the short ballot and responsible governmental organization, and the expansion of American political science to include practical administration and the responsibilities of citizenship. From 1906 to 1927 the Bureau and the National Institute of Public Administration prepared at least 4,600 reports of varying degrees of importance. During the last ten years practically all of the survey work of the Bureau has been undertaken at the request of governors, legislative committees, mayors, and other official agencies. Such a bureau rarely indulges in publicity concerning its accomplishments outside the group of its immediate membership or financial supporters, although publicity is used to describe existing conditions, to set forth facts, and to make recommendations. The staff members have written a number of important books and reports.[70]

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[69] See Gulick, *op. cit.*, Chap. III. In 1921 this School and the Bureau of Municipal Research were reorganized as the National Institute of Public Administration described below. Because of the manner in which universities began to supply the facilities for such training, the Institute in 1924 decided to accept as full-time students only advanced and experienced men. From 1911 to 1927 the number of students who registered for the course was 1468, of which 1299 were part-time and 169 full-time students. The success of those persons trained in this school is rather remarkable. See Gulick, *op. cit.*, pp. 60-65.

During some of the city administrations the Bureau has been able to cooperate closely with the city government; at other times the mayor has attempted to exclude it entirely from the city offices. At present (1930) the cooperation is close and the Bureau furnishes technical service to the city on request. During 1926 and 1927 it made special studies dealing with the city budget procedure, purchasing methods, salary standardization, debt administration, reporting and accounting, taxation, assessments, and revenues. These were undertaken at the request of a sub-committee of the Mayor's Committee on Plan and Survey. A comprehensive chart of the organization of the city, borough, and county governments within the city was prepared and published for use in connection with the projected reorganization plans.[71]

The New York Bureau, like most of the other successful ones, is independent of the political administration and is financed by voluntary contributions from public-spirited citizens. Bureaus financed from community funds or attached to official municipal administrative divisions find it difficult to maintain their independence. An early agency of this type was the department of the Commissioner of Accounts of New York City, established in 1873, the effectiveness of which depended upon the competence of commissioners and mayors and their cooperation.[72] Such agencies ordinarily have not proved particularly successful, due to the fact that appropriations sometimes are curbed, appointments to the agencies are controlled by political parties, and the fact that the research staff is unable to criticize the public officials without risk of losing their positions. As a result their work rarely is of a scientific nature.

(b) *Other bureaus of municipal research.* Other outstanding bureaus of the same class as the New York Bureau are the Bureau of Municipal Research of Des Moines, the St. Paul Bureau of Municipal Research, the San Francisco Bureau of Governmental Research, the Public Service Institute of Kansas

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[70] *Twenty Years of Municipal Research*, pp. 15-16.

[71] Gulick, *op. cit.*, Chap. II, but especially p. 27.

[72] A. Chester Hanford, *Problems of Municipal Government* (A. W. Shaw Co., Chicago, 1926), p. 170.

City, and the bureaus of St. Louis, Rochester, Toronto, Philadelphia, Detroit, and Cleveland. The last three, while independently organized, are financed from community chests. The Rochester Bureau is unique in the fact that it is supported entirely by one person, Mr. George Eastman.[73]

Some bureaus of research operate as departments of some larger parent organization. The bureaus of research of the chambers of commerce of Newark (New Jersey), Akron, Indianapolis, and Kansas City (Kansas), are typical of this class. These bureaus are housed, financed, and directed by the parent bodies. Some bureaus are financed from the city treasuries. The Toledo Commission of Publicity and Efficiency, and the Bureau of Budget and Efficiency of Los Angeles belong to this class. Others do municipal research under the name of taxpayers' associations. The Taxpayers' League of St. Louis County (Duluth), and the New Bedford (Mass.) Taxpayers' Association are of this type. They are financed by subscriptions based upon a percentage of the contributor's tax bill. Of still another type is the Boston Finance Commission, authorized in the city charter with an annual appropriation, the members being appointed by the Governor of Massachusetts.[74] Manchester, New Hampshire, also has a commission appointed by the governor.

These bureaus publish bulletins and reports concerning the various aspects of administration and finance. Usually it is their purpose to aid city officials in a better performance of their duties by suggesting improved methods; and as a result most of the studies are not published for general circulation but for the benefit of the officials concerned. When these methods are ineffective they may carry their information to the public. Such organizations do not become partisan in nature or take sides in elections.

(6) *Municipal research bureaus of national importance.* (a) *The National Municipal League.* Of special importance in the field of municipal research is the National Municipal League located in New York City. It was organized in May, 1894, and

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[73] *Twenty Years of Municipal Research*, pp. 8, 17-29; Reed, *op. cit.*, p. 11; Hanford, *op. cit.*, p. 169. The work of some of these bureaus is described briefly in Ogg, *op. cit.*, Chap. XI.

[74] See *The Finance Commission of the City of Boston* (City of Boston Printing Department, 1928), Vol. XXIII.

was the outgrowth of a National Conference on Good City Government which met in Philadelphia in January, 1894, as a result of a joint call issued in 1893 by the City Club of New York City and the Municipal League of Philadelphia.[75]

The purpose of the League is to act as a central agency to link up and coordinate municipal research throughout the country. It collects information regarding all aspects of municipal research, it holds annual meetings, issues the regular monthly *National Municipal Review*,[76] maintains a library and a research staff, maintains a central card catalog of all the publications issued by the various municipal research bureaus, and issues *Technical Pamphlets,* the *National Municipal League Series of Books,* the *National Municipal League Monograph Series,* and other miscellaneous publications. The annual meetings are attended by specialists in municipal affairs and municipal research, by officials of civic organizations, city planners, city officials, and college professors interested in such work.[77] The programs are concerned with specialized technical problems calling for the opinions of specialists; mere reformers have little place in such meetings. This is indicative of the extent to which the modern important municipal research bureau has changed from a "reform" to a genuine research agency.

There are two organizations closely associated with the National Municipal League which should be distinguished from it. One is the Governmental Research Association and the other is the Municipal Administration Service. The former was organized in 1915 and is the central organization of the local bureaus of municipal research. Annual meetings are held and the results published in mimeographed *Proceedings* issued for the benefit of the constituent members. In addition, the Association publishes "Notes" in the Monthly *National Municipal Review*, recording the accomplishments and plans of the member organizations.[78] Fifty municipal research organizations are now members of this Association which is administered by a governing committee jointly representing the National Municipal League and the Governmental Research Association. The central library of the Association is maintained in connection with the secretariat. A complete file is kept of every available past and current report of all municipal research agencies. Copies of these reports are loaned to member organizations for use in connection with research projects.[79]

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[75] *Proceedings of the Second National Conference for Good City Government, the First Annual Meeting of the National Municipal League, and the Third National Conference for Good City Government* (National Municipal League, Phila., 1895), pp. 304-312. These *Proceedings* were published annually till 1912, from which date the *National Municipal Review* has been published. In 1895 there were 180 municipal reform organizations distributed among thirty-one States.

[76] The *National Municipal Review* was published quarterly, 1912-1916; bimonthly, 1917-1918; and monthly since 1919. The reader interested in municipal affairs should also acquaint himself with the *American City,* a monthly published by the American City Publishing Company.

[77] Municipal research workers also maintain a Governmental Research Conference. There is also a National Association of Civic Secretaries.

The Municipal Administration Service was established in 1926 through the cooperation of the National Municipal League and the Governmental Research Association. It was organized to serve as a clearing house and central library for the various bureaus of municipal research acting through the Governmental Research Association, and at the same time to serve city officials, chambers of commerce, and all others interested in better government by answering inquiries and publishing pamphlets on various technical phases of city administration. It is financed by the Laura Spelman Rockefeller Memorial.[80] It publishes a *pamphlet series* covering outstanding technical problems in municipal administration; a *mimeographed series* consisting of abstracts of reports prepared by other organizations but not widely distributed in their original form; and a *statistical series* presenting information collected by questionnaires and put into tabular form.[81]

(b) *The National Institute of Public Administration.* The formation and incorporation of this Institute in 1921 is the natural outcome of the development of the nation-wide program of the New York Bureau of Municipal Research. While it was not the original plan of the Bureau to make studies and surveys outside of New York City the demands for its services were so insistent that it began making surveys in other cities in 1909. Since that time, 235 separate surveys have been made and have included both city and State governments. This material probably presents a greater mass of valuable case studies and scientific generalizations on State and city government than can be found anywhere else.[82] It was for the purpose of extending the scope of the Bureau's work that the Institute was organized. The Institute, therefore, is not interested solely in New York City but is a scientific and educational organization with an unrestricted field of operation. The Bureau has been continued as a corporation and the greater part of the technical service and survey work is carried on in its name. The chief activities of both the Institute and Bureau are concerned with State and local government, with particular emphasis upon organization, administration and finance in the fields of State, city, county, town, and village governments.[83]

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[78] See *Proceedings of the Seventeenth Annual Meeting of the Governmental Research Association*, Cincinnati, O., Oct. 15, 16, and 17 (Governmental Research Association, New York, 1928). The Secretary for this Association is also Secretary for the National Municipal League, both being located at 261 Broadway, New York City.

[79] See the report of the Secretary, Russell Forbes, in the *Proceedings* (1928), pp. 5-7.

[80] *Summary of the Work of the Municipal Administration Service*, for the year ending Aug. 31, 1928 (Mun. Admin. Service, New York, 1928).

[81] Mr. Russell Forbes is Director of this Service also.

According to its charter it is the purpose of the Institute to conduct a school of public administration dedicated to the training of men and women for the public service, for research in government, for intelligent citizenship and for the teaching of civics; to study and report upon the principles and practices of public administration; and to maintain and develop a library on public administration. It is empowered to carry on work in any part of the United States, to affiliate with any other educational or scientific organization for the advancement of its purposes and objects, and to hold such property as the purposes of the corporation require.[84]

The educational program includes conference courses for students, special conferences with public officials, preparation and publication of textbooks and reports dealing with public administration, participation in the work of organizations and committees dealing with government, and the dissemination of information with regard to government for the average citizen.[85]

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[82] See especially Gulick, *op. cit.*, pp. 27-45, and Chap. IV.

[83] *Twenty Years of Municipal Research*, p. 10. See also Ogg, *op. cit.*, pp. 210-213.

[84] Gulick, *op. cit.*, pp. 70-71. The Institute is located at 261 Broadway, New York City, and receives its financial support from the Carnegie Corporation and from John D. Rockefeller, Jr.

Members of the staff serve as assisting or contributing editors to the *National Municipal Review* and to *Public Management,* the organ of the City Managers' Association. The Institute also acts as a general clearing house and bureau for foreign students and administrators who come to examine American government. It maintains a library of some 18,000 books, pamphlets, reports, and memoranda. It should be pointed out in passing that most of the important surveys conducted by the staff have been done under the name of the Bureau of Municipal Research in order to preserve the continuity and good will of the Bureau in this field of applied research. "There is no other group or organization in the country today which has made so many important governmental reorganizations as has the New York Bureau of Municipal Research." [86]

(7) *Municipal research in universities.* In addition to the research conducted by university professors as individuals in the field of municipal government some of the universities have established bureaus of municipal research. Such bureaus are found at the University of California, University of Colorado, Harvard,[87] University of Kansas, Massachusetts Institute of Technology, University of Michigan, University of Minnesota, University of North Carolina, University of Oklahoma, Syracuse University and, last but not least, the University of Wisconsin.[88]

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[85] For an account of the work in these various fields the reader is referred to Gulick, *op. cit.,* Chap. IV.

[86] Gulick, *op. cit.,* pp. 94-95.

Important surveys have been made also by Mr. L. D. Upson. These include Indianapolis, Rochester, St. Louis, Richmond, Denver, Columbus, San Francisco, and Cincinnati. The published reports of these surveys provide a wealth of information on municipal affairs. See Reed, *op. cit.,* pp. 111-112, and especially his references on p. 116.

There is also in New York City an "Institute for Public Service" conducted by William H. Allen. It makes surveys and carries on educational work without limiting itself to any one city.

[87] Harvard maintains, in addition to her Bureau of Municipal Research, the Albert Russel Erskine Bureau for Street Traffic Research.

[88] *Twenty Years of Municipal Research,* p. 36.

While much of the municipal research of today may be considered applied in nature as contrasted to the pure, most of the research conducted in the universities is of the latter type. This, doubtless, is as it should be.

CHAPTER XVII

COUNCILS, LEARNED SOCIETIES, UNIVERSITIES, AND FOUNDATIONS IN RESEARCH

Non-governmental research organizations in the United States are multitudinous in number and, as in the case of the international organizations, they present a confusing picture with their overlapping and duplication of plans and functions. To present a clear-cut picture of the tendencies and developments in the various types of research organizations, without at the same time becoming involved in a mass of descriptive and historical detail, is not easy; and yet it is the writer's purpose to avoid all detail possible and present only the most outstanding characteristics and movements in research as found today.[1]

The great number of organizations engaged in or fostering research, particularly those like the learned academies and various research councils, with the accompanying confusion in purposes and in the fields to be covered, have made it evident that there is a need for coordination, simplification, and cooperation. As a result, recent years have witnessed the development of certain centralizing movements for the purpose of accomplishing just these things. The situation is not unlike that portrayed in the international fields. Simplification undoubtedly is to be desired if it can be accomplished without stifling individual initiative and without the creation of even more organizations. Already we are submerged in organizations. Committees are a national disease and affliction and in no place is this fact more evident than in the fields of research. On the slightest provocation a new research organization springs up and quite often this is without regard to organizations already in existence which are thoroughly competent to accomplish the desired results. Indeed, there is ample evidence to show that many so-called research organizations have been created without provocation or excuse, and after their organization is effected they attempt to find something to do. One could hardly find better examples of the make-work idea than in some of the existing organizations. They could drop out of existence and not make a ripple upon the surface of intellectual progress. The burden of proof rests upon any one who wishes to create a new research organization in the social sciences in these days. It is an open question whether many if not most of these organizations have brought greater results than would have resulted from unorganized individual research.[2] Many organizations, of course, have been invaluable and the results secured by them could have been secured in no other way, but this is an observation that cannot be made regarding many others which appear to assume the same virtues.

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[1] A descriptive account of many of the research organizations alluded to in this chapter will be found in Frederic A. Ogg, *Research in the Humanistic and Social Sciences* (The Century Co., New York, 1926).

The first of the pronounced trends which we shall examine is that found in the centralization and coordination taking place principally among the national academies, learned societies, institutes, and councils. Superimposed upon these are three outstanding organizations: (1) The National Research Council, organized in 1916; (2) the American Council of Learned Societies, created in 1919; and (3) the Social Science Research Council, established in 1923. A brief account of each of these will be given in the order mentioned.

The National Research Council

This Council, organized in 1916 to mobilize the scientific resources of the country as an aid in winning the War, is a cooperative organization bringing together the chief scientific and technical organizations principally in the fields of the natural sciences. It is a federation of governmental, educational, privately endowed, and industrial research agencies which are engaged in research in such fields as mathematics, physics, biology, engineering, medicine, agriculture, and related fields. Its nature may be understood better if we examine briefly its origin, since it sprang from the old National Academy of Sciences and exists by authority of the charter of that parent organization.

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[2] For a penetrating account of the tendency to over-organize as well as for some interesting and caustic comments upon contentions of the advocates of cooperative effort in research, see Harold J. Laski, "Foundations, Universities, and Research," *Harper's Magazine* (August, 1928), pp. 295-303.

The National Academy of Sciences, like its more modern offspring, was created during a war to aid the government by focusing the available scientific resources of the country upon the government's war problems. This Academy was organized during the Civil War, the charter being passed by Congress and approved by President Lincoln in 1863. The charter provided that "the Academy shall, whenever called upon by any department of the Government, investigate, examine, and experiment, and report upon any subject of science or art." [3] Under authority of this provision the Academy has acted since its organization as an official adviser of the government on a wide variety of questions. During the Civil War, especially, its committees and its members dealt actively with military and naval problems of the same type as those which pressed insistently for solution during the World War. It was thus a natural step on the part of the Academy to offer its services to the President in April, 1916, when our relations with Germany were tense, and for the President to accept the offer and request the Academy to organize the scientific resources of the country to accomplish the end in view. The result was the creation of the National Research Council by the Academy. As its work progressed, it became evident that it was desirable that a more formal statement of its objects be secured from the President and that he give public expression to his desire that it be perpetuated by the Academy and that it would be assured of the permanent cooperation of the various departments of the government. As a result President Wilson, on May 11, 1918, issued an executive order in which he reviewed the work accomplished by the Council in organizing research and in securing the cooperation of the military and civilian agencies of the country in the solution of military service, all of which, he insisted, demonstrated its capacity for larger service. The order requested the National Academy of Sciences to perpetuate the

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[3] *The National Research Council: Organization and Members, 1926-1927,* an annual Bulletin (Washington, D.C., December, 1926); Henri Reverdin, *United States of America. The Principal Academies and Learned Societies in the United States of America,* League of Nations Committee on Intellectual Cooperation, Brochure No. 12 (Imprimeries réunies, Chambéry, 1923) pp. 7-8; Ogg, *op. cit.,* pp. 14-15, 168-170.

National Research Council and set forth that its duties should be as follows:

"1. In general, to stimulate research in the mathematical, physical, and biological sciences, and in the application of these sciences to engineering, agriculture, medicine, and other useful arts, with the object of increasing knowledge, of strengthening the national defence, and of contributing in other ways to the public welfare.

"2. To survey the larger possibilities of science, to formulate comprehensive projects of research, and to develop effective means of utilizing the scientific and technical resources of the country for dealing with these projects.

"3. To promote cooperation in research, at home and abroad, in order to secure concentration of effort, minimize duplication, and stimulate progress; but in all cooperative undertakings to give encouragement to individual initiative, as fundamentally important to the advancement of science.

"4. To serve as a means of bringing American and foreign investigators into active cooperation with the scientific and technical services of the War and Navy departments and with those of the Civil branches of the Government.

"5. To direct the attention of scientific and technical investigators to the present importance of military and industrial problems in connection with the war, and to aid in the solution of these problems by organizing specific researches.

"6. To gather and collate scientific and technical information, at home and abroad, in cooperation with governmental and other agencies, and to render such information available to duly accredited persons.

"Effective prosecution of the Council's work requires the cordial collaboration of the scientific and technical branches of the Government, both military and civil. To this end representatives of the Government, upon the nomination of the National Academy of Sciences, will be designated by the President as members of the Council, as heretofore, and the heads of the departments immediately concerned will continue to cooperate in every way that may be required." [4]

[4] *The National Research Council: Organization and Members, 1926-1927,* an annual bulletin (Washington, D. C., December, 1926).

The National Research Council is thus a cooperative organization of scientific men of America. It enjoys the cooperation of the major scientific and technical societies of the country, its membership being composed largely of appointed representatives of over seventy of these societies, representatives of governmental scientific bureaus, and a limited number of members at large.

During the World War the Council served the government in a cooperative capacity as the Department of Science and Research of the Council of National Defense, and also as the Science and Research Division of the United Signal Corps. Since the War the Council has been adapted to peace conditions and has for its essential purpose the promotion of scientific research and the application and dissemination of scientific knowledge for the benefit of the national strength and well-being.

The Council is administered by a small group of officers and an Executive Board, with an Interim Committee which acts for the Board in the intervals between its stated meetings. The Council itself is composed of eleven major divisions arranged in two groups. One group comprises seven divisions of science and technology representing physics, mathematics, and astronomy; engineering and industrial research; chemistry and chemical technology; geology and geography; the medical sciences; biology and agriculture; and anthropology and psychology. The other group comprises four divisions of general relations and educational relations. Each of these divisions comprises a larger or smaller series of committees, each with its special field or subject of attention.[5] There are certain other committees, administrative and technical, which affiliate directly with the Executive Board of the Council. Related to the Executive Board in a similar way is a Research Information Service.[6]

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[5] For example, the Division of States Relations has sponsored such surveys as that conducted by Professor Leonard D. White on the place of scientific research in the States. See pp. 417-420 above. The Division of Educational Relations has conducted a survey of the status of research in the colleges and universities of the country as well as of certain other educational problems. The Division of Foreign Relations represents the United States in the General Assembly of the International Research Council. See p. 362 above, especially note 8.

[6] This Service, at 1701 Massachusetts Ave., Washington, D. C., which is also the address of the Publication Office of the National Research Council, ordi-

The Council maintains two series of publications, one called *Bulletins,* the other, *Reprints and Circulars.* The *Bulletins* are used for the publication of general sources for scientific knowledge, reports upon the status of various fields of research, and special contributions of an original character. The *Reprint and Circular Series* includes less extensive papers and is used also to give special or extended distribution to timely articles, some of which have had a limited circulation elsewhere. In addition, the Council issues a considerable number of miscellaneous publications.

The financial support of the administrative work of the Council is assured by gifts from such organizations as the Carnegie Corporation of New York, the Rockefeller Foundation, the General Education Board, the Commonwealth Fund, the American Telephone and Telegraph Company, and similar organizations. Part of the Carnegie gift of five million dollars (to the National Academy of Sciences) was devoted to the erection of an imposing building in Washington for the joint use of the Council and Academy,[7] although a large part of the gift constitutes a permanent endowment in the hands of the Academy, the income from which is to be used for the general purposes of the National Research Council. The Council relies upon special gifts obtained from time to time from various sources to support special scientific projects. For example, the Rockefeller Foundation made a gift to support post-doctorate fellowships in physics, chemistry, and mathematics. The same Foundation and the General Education Board made gifts to support a group of research fellowships in the medical sciences to be administered by a Medical Fellowship Board. The same Foundation also has made gifts for the maintenance of similar fellowships in the biological sciences, including zoology, botany, anthropology, and psychology, and administered by a Board of National Research Fellowships in the Biological Sciences.

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narily renders its service without charge, but where difficulties will be involved the inquirer will be furnished with an estimate of cost.

[7] For an excellent descriptive account of this building accompanied with illustrations and photographs, see George E. Hale, "A National Focus of Science and Research," *Reprint and Circular Series of the National Research Council,* No. 39, reprinted from *Scribner's Magazine* for November, 1922 (Washington, D. C., 1923).

In addition, the Research Fellowship Board for Physics, Chemistry, and Mathematics, and the Board of National Research Fellowships in the Biological Sciences, administer a number of fellowships available for work abroad, maintained on funds furnished by the International Education Board and the Division of Studies of the Rockefeller Foundation. Other gifts from various sources to support special undertakings of the Council have amounted to more than one million dollars.

The Council is neither a large operating scientific laboratory, nor a repository of large funds to be given away to scattered scientific workers or institutions. Rather, it hopes to bring together scattered work and workers, and to assist in co-ordinating, in some measure, scientific attack in America upon large problems in any and all lines of scientific activity. This is done largely through the establishment of special committees of carefully chosen experts for specific scientific subjects or problems urgently needing consideration, who shall plan modes of attack and undertake to find men and means for carrying out the plan; the bringing together of industrial concerns interested in the development of the scientific basis of their processes and encouraging them to support the establishment of special laboratories or institutes devoted to this development under the advice of experts representing the Council; the stimulation of larger industrial organizations which may be in a situation to maintain their own independent laboratories, to see the advantage of contributing to the support of pure science in the universities and research institutes for the sake of increasing knowledge and scientific personnel on which future progress in applied science absolutely depends; the direct maintenance of scientific research fellowships; the publication of valuable scientific papers for which there is at present no other suitable prompt means of issuance; the preparation of bibliographies and abstracts of current scientific literature; the setting up of well-considered mechanisms for the collection and distribution of information on current research, university and industrial research laboratories and facilities, scientific instruments and apparatus, and the dissemination through the press and through magazines, of popular, authentic scientific news and information for the sake of increasing the public interest in and support of productive scientific work.[8]

The American Council of Learned Societies[9]

The American Council of Learned Societies was organized in 1919, primarily for the purpose of participating in the activities of the International Union of Academies of which it is a member. It is a federation of fifteen societies which include practically all American scholars who are working in the fields of the humanistic and social sciences. The Council does not endeavor to carry on research itself but rather supervises research projects brought to it from the outside. In general its purpose is to propose and arrange for broader research projects than could be undertaken with ease by the individual constituent societies.

Each society is represented in the Council by two delegates, and this group is reinforced by the membership of the standing special committees which triples the effective personnel of the Council. The secretaries of the constituent societies are regularly invited to attend the annual meetings of the Council and are enabled also by means of Council funds to hold an annual conference of their own and thus there is maintained a close and effective liaison between the Council and its component bodies.

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[8] An important scientific association which cooperates with the National Research Council is the American Association for the Advancement of Science, formed in 1848 and incorporated in 1874. It is fundamentally an association of naturalists and geologists, North and South America being its special fields of study. There are fifteen sections, as follows: (A) Mathematics, (B) Physics, (C) Chemistry, (D) Astronomy, (E) Geology and Geography, (F) Zoological Sciences, (G) Botanical Sciences, (H) Anthropology, (I) Psychology, (K) Social and Economic Sciences, (L) Historical and Philological Sciences, (M) Engineering, (N) Medical Sciences, (O) Agriculture, and (P) Education.

The Association publishes the *Scientific Monthly* and the weekly, *Science*, and at intervals publishes a volume of summarized proceedings. Not only does it cooperate with the National Research Council but it cooperates with all scientific associations of America when such cooperation seems desirable and practicable. There are two subdivisions of the Association: the South-West and the Pacific. Each subdivision, like the parent association, has its affiliated societies. Meetings are held annually. See Reverdin, *op. cit.*, pp. 6-7; James M. Cattell, "The Journal 'Science' and the American Association for the Advancement of Science," *Science* (Oct. 8, 1926), Vol. LXIV, No. 1658, pp. 342-347.

[9] Waldo G. Leland, "The International Union of Academies and the American Council of Learned Societies," *Bulletin of the Institute of Historical Research* (Longmans, Green and Co., London, Nov. 1926), Vol. IV, No. 11, pp. 70-72; Ogg, *op. cit.*, pp. 3-5, 107-110; and *American Council of Learned Societies Bulletin No. 9* (Dec., 1928), *passim.*

The Council, which was incorporated in the District of Columbia in 1924, has its business administered by a small executive committee of five appointed by the Council and by a permanent secretary, an assistant secretary, and an office manager. In 1928 an Advisory Board of nine members was added. A general meeting is held at least once each year and the executive committee meets as often as may be necessary.

The financial support of the Council is derived from the annual assessments of the member societies at the rate of five cents per member and from subventions granted by various American foundations and individuals who are interested in the work of the Council, for example, the Carnegie Corporation of New York, the Carnegie Institution of Washington, the Laura Spelman Rockefeller Memorial Foundation, Mr. John D. Rockefeller, Jr., the General Education Board, the New York Times Company, Charles Scribner's Sons, and various other donors.

The aims of the American Council of Learned Societies are twofold: (1) to advance the interests of the humanistic sciences in America, especially by encouraging, initiating, and promoting research in those studies and by maintaining and strengthening the relations between the national societies devoted to them, and (2) through its membership in the International Union of Academies (UAI) to serve as an agency for the conduct of continued relations between its constituent societies and other American organizations of scholars, on the one hand, and academies and analogous bodies in foreign countries, on the other. The chief interests of the American Council are indicated in the names of the present working committees: The Committee on the *Corpus Vasorum Antiquorum* (UAI); Committee on *Studies in Indonesian Customary Law* (UAI); Committee on a *Dictionary of Mediæval Latin* (UAI); Committee on a *Dictionary of Late Mediæval British Latin*; Committee on Management, *Dictionary of American Biography*; Committee on a Catalog of Foreign Manuscripts in American Libraries; Committee on Research in the Native American Languages; Committee on Linguistic and National Stocks in the Population of the United States; Committee on a List of Serial Publications of Foreign Government (joint committee with American Library Association and National Research Council); Joint Committee of Conference with the Social Science Research Council; and Committee on Aid to Research. It will be observed from the nature of the committees that the Council has brought about the active participation of American scholars in the work of the International Union on the *Corpus Vasorum Antiquorum,*[10] on the *Studies in Indonesian Customary Law,* and on the *Dictionary of Mediæval Latin,* and also in the Anglo-American undertaking of a *Dictionary of Late Mediæval British Latin.*[11] Upon the proposal of the American Council of Learned Societies, the International Union of Academies voted in 1926 to sponsor the compilation of an international descriptive catalog of current bibliographies in the fields of the humanistic and social sciences. That part of the catalog containing the current bibliographies published in American countries is being prepared by the American Council of Learned Societies and the rest by the International Institute of Intellectual Cooperation in Paris.

Perhaps the most ambitious enterprise now under way is the *Dictionary of American Biography,* under the editorship of Professor Allen Johnson, an undertaking made possible by a subvention of $500,000 from Mr. Adolph S. Ochs, in the name of *The New York Times.* This work is planned along lines similar to those of its famous British prototype, although its scope is somewhat broader in order to meet the demands of more varied interests.

A subvention from the Laura Spelman Rockefeller Memorial enables the Council to offer annually a number of small grants to scholars who are engaged in projects of constructive research and who require aid in meeting expenditures for travel, copying, clerical assistance, appliances, etc.[12] The Council is endeavoring to extend this method of encouragement by seeking support for important projects of research presented by scholars who require gifts of larger amounts extending over a period of years.

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[10] See Mortimer Graves, *The Corpus Vasorum Antiquorum,* reprinted from *Bulletin No. 7* (April, 1928).

[11] Under the auspices of the Council, a society known as the Mediæval Academy of America, devoted to the promotion of mediæval studies, was organized in 1925 and began to publish a quarterly journal called *Speculum.* This academy separated from the Council, was incorporated in 1925, and became a constituent member of the Council in 1926. See below, p. 454.

[12] The first awards were made for the year 1926 and were for the purpose of aiding twenty-one professors or instructors in American colleges and universities. For such lists, see the *Bulletin of American Council of Learned Societies, No. 5* (May, 1926), and *No. 6* (May, 1927).

One of the accomplishments of the American Council of Learned Societies has been the making of the survey of the existing state of research in the humanistic and social sciences, the results of which have been made available by Professor Frederic A. Ogg in the book, *Research in the Humanistic and Social Sciences* (The Century Co., New York, 1928). This inquiry was planned and conducted during the years 1926-1927 and supported by the Carnegie Corporation of New York. The objects of this survey, which have been accomplished most admirably, are worth quoting in detail. They are: "(1) To obtain as complete a picture as possible of the condition of research at the present time, bringing to light current tendencies and directions of interest and providing a background of information for the more effective handling of research problems and the wiser planning of research programs; (2) to reveal existing obstacles to fruitful research, to contribute to a visualization of research needs, and to stimulate interest in quarters where it is at present lacking or flagging, whether among university professors or administrators, non-academic organizations that have to do with large matters of human well-being, or individuals and corporations that would be glad to devote means and energy to the support of scholarship if only the need and the way were pointed out; (3) to reduce the handicap from which the humanistic and social sciences have hitherto suffered through the too rigid separation of their various fields, by bringing the work of one field to the attention of workers in other fields, and by revealing overlappings of effort, gaps that should be closed up and opportunities for helpful cooperation; (4) to assemble a body of data which can be made to serve as the starting point of concerted efforts to maintain hereafter a continuous comprehensive record of humanistic and social research and its results; (5) to suggest and provoke more intensive studies of particular research problems, *e.g.*, the problem of bringing about more adequate provision for the publication of the results of research, on terms not —as is now too frequently the case—penalizing the research worker for his ingenuity and diligence; and (6) to make the scholarly work of America better known abroad, thereby lessening the danger of wasteful duplication and, indeed, inviting fruitful cooperative effort." [13]

Another extensive survey of the learned societies in the humanistic and social fields is that being carried out by Dr. Waldo G. Leland, permanent secretary of the American Council of Learned Societies and the Assistant Secretary, Mortimer Graves.[14] This survey will cover some forty societies.

During 1928 the Council embarked on a survey of Chinese civilization in order to increase our knowledge of the Chinese. Such a movement was considered desirable, since the facilities in this country for studying the various aspects of Chinese civilization are negligible, despite the fact that it has been estimated that prior to 1750 more books had been published in Chinese than in all other languages combined, that as late as 1850 Chinese books outnumbered those in any other language, and that in 1928 the largest publishing house in the world is located not in New York or London, but in Shanghai.[15] The first results of this study have been published under the title "Promotion of Chinese Studies" in *Bulletin No. 10* of the American Council of Learned Societies.

A press bureau is maintained; conferences are held annually with the secretaries of the constituent societies; the Council is assisting the Modern Language Association in its compilation of a Middle English Dictionary; it has a committee engaged in considering the building of a catalog of foreign manuscripts in American collections; it is engaged jointly with the American Library Association and the National Research Council in compiling a list of serial publications of foreign governments; it has published a list of American journals devoted to the humanistic and social sciences; [16] and various other enterprises of an extremely varied nature are undertaken.[17]

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[13] Ogg, *op. cit.*, pp. 4-5.

[14] *Ibid.*

[15] *Bulletin, No. 10 of the A.C.L.S.* (April, 1929), pp. 3-11.

[16] Published in *Bulletin No. 4* (June, 1925) and in revised form in *Bulletin No. 8* (Oct., 1928).

[17] See *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928).

The constituent societies of the American Council of Learned Societies

Because of the intimate relationship which the research worker in the social sciences of necessity must have with the constituent organizations composing the American Council of Learned Societies, it seems desirable, for the sake of convenience to the reader, to digress enough from our general purpose to make a brief survey of these various organizations, even at the risk of adding considerable detail to what is otherwise designed to be a general treatment. In this manner we are able also to present a more adequate picture of the scope of the work and of the influence of the Council. Only the minimum of facts necessary to convey a fairly accurate general idea of the nature of the associated organizations is recorded.[18] Each organization is memtioned in the order of its date of origin.

It should be understood before reviewing each of the following learned societies that it is quite common to distinguish learned societies according to whether they are of the English and European type or of the American type. The former type has a closed membership, includes workers in both the natural and social sciences, is organized, usually, in departments or sections corresponding with the various and diverse disciplines represented in the membership, and in general is free from that fringe of cultured amateurs which characterize most of the American societies. Exclusiveness and maturity of membership characterize the European academy.

The American learned societies or academies, on the contrary, are seldom composed of such exclusive membership. They also are usually devoted to a single main field of knowledge and are composed not only of the leading scientists in the field but of a large body of hangers-on and amateurs, more or less interested, who have contributed or do contribute little of value in the form of original knowledge in the field to which the society is devoted.

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[18] For information in addition to that afforded by the sources specifically cited, the reader is referred to Ogg, *op. cit., passim;* to the reports of meetings of the organizations, particularly the annual meetings, described in their publications; and to the reports on activities of the constituent societies of the American Council of Learned Societies, in its *Bulletin No. 9*, to which frequent reference hereafter is made as *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928).

The actual work of value usually is contributed by and under the control of relatively few persons. In brief, the societies in the United States are more democratic, but whether they are more valuable as a result probably is a debatable question. In many of the learned societies of the United States the active, working membership comes largely from the university and college faculties. This type of membership carries on most of the work and if research of value is done it usually is done by these members. In fact, most of these societies cannot be called research organizations in any true sense. Most of them have no machinery for conducting research; the research accomplished ordinarily is that accomplished by the individual members who present the results to the respective societies which publish them in their various journals. At the best, they only foster research and accord recognition to worthy men and projects and lend moral support to research work in the universities. They are not research bodies as such and probably never can be. For this reason the leading foundations have shown no disposition to endow such societies.

(1) The American Philosophical Society, the oldest learned society in the United States, owes its origin to Benjamin Franklin's "Junto," founded in 1727. This was a local society of twelve "ingenious" men, friends of Franklin, who met for mutual improvement. In 1769 the Junto was merged with the American Philosophical Society which also had been organized by Franklin in 1743. The modern organization dates from this merger although it is common to date the origin back to 1727. It has not been a specialized society, the term philosophy being used in a broad sense to include any branch of learning in which the scientific and philosophical methods are applied. The organization was modeled after the Royal Society in London and is one of the American societies which bears some of the characteristics of the European academies. It is somewhat exclusive in nature, admitting only persons who have achieved scholarly distinction.[19] The

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[19] The membership of the society is 471, of which 402 are American and sixty-nine are foreign. The total number of foreigners who may be elected has been reduced to fifty. Only fifteen Americans may be elected each year (enough to fill the average number of vacancies due to death). Among the present foreign members are such eminent ones as Lord Balfour, Madame Curie, Sir Francis Darwin, Baron d'Estournelles de Constant, Marshall Joffre,

results of the researches of members are published in the *Transactions* (since 1771) and the *Proceedings* (since 1838). There are various miscellaneous publications such as the *Record of the Celebration of the 200th Anniversary of the Birth of B. Franklin,* in six volumes. It offers annually the Magellanic Premium and the Henry M. Phillips prize for the crowned essay on a designated subject in the science and philosophy of jurisprudence. The society has its own building in Independence Square, Philadelphia, which it has occupied since 1789. At present it is engaged in raising a fund of three million dollars for a building and for general endowment. It became a member of the American Council of Learned Societies in 1919.[20]

(2) The American Academy of Arts and Sciences, founded in Boston in 1780 and chartered by the State of Massachusetts, is another academy of European design. Its purpose was "to cultivate every art and science which may tend to advance the interest, honor, dignity, and happiness of a free, independent, and virtuous people." The Academy membership consists of Fellows who are either citizens or residents of the United States and foreign honorary members. In addition, there are non-voting Associates. The number of Fellows is limited to 600, of whom not more than 400 may be residents of Massachusetts, and the number of foreign members at present is 83, all of whom are chosen because of eminence of attainment in the scientific fields covered by the Academy. The fields are divided into three principal classes each of which is subdivided into four fields. Class I is the Mathematical and Physical Sciences; Class II, the Natural and Physiological Sciences; and Class III, the Moral and Political Sciences. The Academy publishes irregularly *Memoirs* (dating from 1785) and *Proceedings* (dating from 1846) and holds eight meetings per year. Communications offered for publication in the *Proceedings* or *Memoirs* of the Academy are not accepted for publication before the author has informed the Committee on Meetings

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and Drs. Delitzsch, Marconi, Nansen, Raymond Poincaré, Voltera, and de Vries.

[20] See Reverdin, *op. cit.*; Ogg, *op. cit.*, pp. 100-101; *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), p. 14. This *Bulletin* includes a directory of the constituent societies.

of his readiness, either himself or through some agent, to use such time as the Committee may assign him at a meeting convenient both to him and to the Committee, for the purpose of presenting to the Academy a general statement of the nature and significance of the results contained in his communication. The Academy is not a research organization but maintains a library of about 41,000 volumes and effects exchanges with the principal learned societies throughout the world. It administers the gift of Sir Benjamin Thompson, Count Rumford, a trust fund for the advancement of knowledge of light and heat, and is custodian of the Cyrus Moors Warren Fund, the income of which is used to defray the cost of various publications in natural science.[21]

(3) The American Antiquarian Society, founded in 1812 and located at Worcester, Massachusetts, is not a research organization or an academy, but collects and preserves materials for the study of American history and documents. Membership in this organization is honorary. Its library at Worcester affords some of the most important sources for the American historian and is placed at the disposal of such research workers. It publishes semi-annual *Proceedings* and *Transactions* (occasionally).[22]

(4) The American Oriental Society, dating from 1842, incorporated in 1843, and with executive offices in care of the corresponding secretary, was established in order to cultivate "learning in the Asiatic, African, and Polynesian languages, as well as the encouragement of researches of any sort by which the knowledge of the East may be promoted." It is of the American type of society, holding annual meetings at which papers are read, and publishes a quarterly *Journal of the American Oriental Society* and *American Oriental Series* (occasional). It conducts no research and has no research funds to administer although it is planning, in cooperation with the American Council of Learned Societies, to raise funds for the establishment of an American School of Indo-Iranian Research in India. Its chief

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[21] *Proceedings of the American Academy of Arts and Sciences* (May, 1928), Vol. 62, No. 9, pp. 289-335; *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), p. 62.

[22] *American Antiquarian Society. Handbook of Information* (published by the society, Worcester, Mass., 1909); *A Survey of the Library of the American Antiquarian Society Founded 1812* (published by the society, Worcester, Mass., 1928); *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), p. 62.

function perhaps is to serve as a clearing house for information for the relatively few persons interested in its activities.[23]

(5) The American Philological Association, organized in 1869, was originally designed to include philologists in all fields, but since the appearance of the various modern language associations, it has confined itself to classical philology and fosters scholarship and research in this field. Annual meetings are held at which papers are read, and these and others are published in its *Transactions and Proceedings.* There are no permanent headquarters, the secretary being the active head of the association. No research is carried on by the Association in an organized sense although it has received from the Carnegie Corporation a grant of $5,000 for the establishment of a revolving fund to underwrite "selected works of scholarship which commercial publishers are unwilling to produce without a guaranty." [24]

(6) The Archæological Institute of America, founded in 1879 and incorporated in 1906, is typically American since its membership includes both the professional and the layman, membership being classified in nine groups. No brief account will convey an adequate idea of the relative importance of the work undertaken by this Institute. According to its Constitution, the Institute "is formed for the purpose of promoting and directing archæological investigation and research, by sending out expeditions for special investigation, by aiding the efforts of independent explorers, by publication of archæological papers and of reports of the expeditions which the Institute may undertake or promote, and by any other means which may from time to time appear desirable."

It holds the conventional annual meetings; it establishes regional archæological societies, of which there are forty-eight in the United States and Canada; it maintains research fellowships in various fields of archæology; it supports public lectures; it maintains close working relations with a number of archæological schools which it has either established or organized, the schools being located in Athens, Rome, Jerusalem, Bagdad, the School of American Research at Santa Fé, and the American School of Prehistoric Research incorporated in the District of Columbia but with no permanent base of operations; it publishes the annual *Bulletin* (since 1880), the quarterly *American Journal of Archæology* (since 1886), and the monthly *Art and Archæology* (since 1914). Many of the most important excavations in Greece, Palestine, Africa, the United States, Mexico, Central America, and other parts of the world, have been under the direction of the Institute and its schools. Grants in aid have been made by the Carnegie Corporation, by Mr. John D. Rockefeller, Jr., by the General Education Board, and others, the funds of the General Education Board being devoted to the excavations in the Athenian *Agora* and to schools in Athens and Rome. The Institute, which is a particularly vigorous organization, apparently is limited only by lack of funds. The demands upon it for aid in excavations are many and heavy. It doubtless would be beneficial to all parties concerned if all archæological projects could be placed under the general supervision of the Institute. Thus far, its lack of funds has handicapped the Institute in such work.[25]

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[23] *Journal of the American Oriental Society* (Dec., 1928), Vol. 48, No. 4, pp. 363-367; *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), pp. 44, 62.

[24] Frank G. Moore, "A History of the American Philological Association," *Transactions and Proceedings of the American Philological Association* (1919), Vol. I, pp. 5-32; *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), pp. 14, 63.

(7) The Modern Language Association of America was organized in 1883 and incorporated in 1900. Its membership is composed of the modern language teachers in the leading schools of this country; it holds annual meetings; maintains some thirty-five research groups, some of which conduct cooperative and continuous research enterprises; certain funds are made available to and administered by the Association for aid in the publication of scholarly works with little commercial value. It publishes the quarterly *Publications of the Modern Language Association of America, Monograph Series* (occasional), and *Revolving Fund Series* (occasional). A special committee has been engaged in studying general questions of organization, with a view to a revision of the constitution and by-laws of the Association.[26]

(8) The American Historical Association was founded in 1884

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[25] "Annual Reports, Minutes of the Council, Directory," *Bulletin of the Archæological Institute of America* (Dec., 1927), Vol. XVIII, *passim*; descriptive leaflets issued by the Institute; and *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), pp. 14, 63.

[26] *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), pp. 15, 63.

and chartered by Congress in 1889. Its membership, typically American in nature, is composed of the scholars of history who are engaged in teaching, writing, and research. In addition, there is the usual fringe of amateurs and laymen. It holds the usual annual conventions before which papers are read; it publishes (since 1895) the *American Historical Review* (quarterly) and an *Annual Report* (issued under Act of Congress as a public document); it appoints many and various committees to recommend, supervise, and investigate historical projects; and a general bibliographical *Guide to Historical Literature* is nearly completed. It encourages historical research in every manner possible; administers prizes; cooperates with government and private agencies in historical research projects; assumed a leading part in the creation of the American Council of Learned Societies and the International Committee of Historical Sciences; is represented in the Social Science Research Council; and at present is engaged in raising an endowment of one million dollars after which it is proposed to place in effect a comprehensive and systematic program for organized research and publication.[27]

(9) The American Economic Association was founded in 1885 and probably is one of the most typical of the various American associations and academies. Its membership is open to all who are sufficiently interested in economics to pay the membership fees. As in most organizations of this nature the active work is carried on by a few economists, most of whom are connected with college or university faculties, the majority of members confining their activities largely to attending the annual conventions or in reading the quarterly publication, the *American Economic Review, Papers and Proceedings* of annual meetings and an annual *Handbook* published as a supplement to the *Review*.[28] As an organiza-

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[27] For an excellent discussion of the work of this Association, see Ogg, *op. cit.*, pp. 125-134, 421-422. For an account of the Association's work prior to 1920 see Waldo G. Leland in the *Annual Report of the American Historical Association for the Year 1920* (United States Government Printing Office, Washington, D. C., 1921), pp. 73-82; *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), p. 15.

[28] *The American Economic Review* dates from 1911 and is the fourth series of volumes. From 1886-1896 the publications were known as the *Publications of the American Economic Association*; 1896-1899, *Economic Studies* (bimonthly and the "New Series" of larger monographs printed irregularly);

tion it does not conduct research directly. Spasmodically committees are appointed to investigate questions of interest, the reports of which may be published in supplements to the *Review*. In the main, however, the Association merely encourages research; cooperates with other agencies and organizations, such as the American Statistical Association, at times considered appropriate; publishes a yearly supplement to the *Review* of the papers and proceedings of the annual convention; occasionally administers prizes; and cooperates with the American Council of Learned Societies and the Social Science Research Council. While the Association has no funds to administer in research it was incorporated in 1923 with the expectation that in time it might have such funds.[29]

(10) The American Philosophical Association was founded in 1900 and is an offshoot of the American Psychological Association which was organized in 1892. A Western Philosophical Association already had been formed, a Southern Association later appearing. The American Philosophical Association was broadened to cover three essentially distinct societies, the Eastern, Western, and the Pacific Coast divisions. The Southern Association as yet has not joined the others. No research is conducted by these divisions. Annual meetings are held and the results appear in the annual *Proceedings and Addresses*. Any research which is done is entirely individual. The Association has received a grant from the Carnegie Corporation to enable it to edit and publish a series of *Source Books in the History of the Sciences*.[30]

(11) The American Political Science Association was founded in 1903 to promote the scientific study of politics, public law, administration, and diplomacy. It is the typical American association, the membership being composed in a large degree of members of college and university faculties in political science,

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1900-1910, *Economic Studies* (Third Series, quarterly); also the *Economic Bulletin*, published quarterly in 1908-1910; and since 1911, the *American Economic Review*.

[29] "Handbook of the American Economic Association, 1928," *American Economic Review Supplement* (June, 1928), Vol. XVIII, No. 2, pp. 1-4, 131-138.

[30] H. N. Gardner, "The First Twenty-five years of the American Philosophical Association," *Philosophical Review* (March, 1926), Vol. XXXV, pp. 145-158; *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), pp. 15, 64.

although the closely allied professions also supply many members. The membership is composed of both the professional and the layman. The usual annual conventions are held and the chief publication is the quarterly *American Political Science Review.* Until 1921 it encouraged individual research in the general way common to such associations. In that year, however, it established a committee on the organization of research in political science, which made reports on the status of research in its field and made certain recommendations, two of which were of importance and resulted in the organization of the Social Science Research Council[31] and the National Conference on the Science of Politics.[32] The Social Science Research Council functioned so well that it absorbed practically all the duties of the committee chiefly responsible for its creation. As a result the committee was permitted to expire, although a new one was appointed in 1926 to function in its place and to determine, among other things, the possibilities of expanding the work of the Association in research. In December, 1928, the Association voted to endorse and to carry out, so far as possible, the recommendations of the committee. According to this plan it is the purpose of the Association to develop itself ". . . into a highly effective instrumentality for encouraging the scientific study and teaching of government, and for making the results of scientific governmental research available to citizens and public officials in such form that their use will improve the quality of government in the United States. Specifically, it is proposed that provision should be made for an executive director of the Association, with suitably equipped and staffed offices in Washington. This official is to be assisted by committees of the Association on research, publication, membership, personnel, education for citizenship, and other purposes. . . . The executive director will seek to coordinate research in the United States in the field of political science and, in cooperation with universities and other agencies, to secure financial support for approved research projects, and to enlarge the related activities of the Association in order to make its influence more generally felt in the fields of education and citizenship."[33]

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[31] See below, pp. 454-460.

[32] See the *American Political Science Review* (Feb., 1924), Vol. XVIII, No. 1, pp. 119-166; (Feb., 1925), Vol. XIX, No. 1, pp. 104-162; and (Feb., 1926), Vol. XX, No. 1, pp. 124-170; Ogg, *op. cit.*, pp. 145-148; *The American Political Science Association*, a pamphlet (published by the Association, 1929).

(12) *The American Sociological Society*, organized in 1905, is quite similar in nature and functions to the associations in history, economics, and political science described above. Its membership is similar in nature, its research activities consist principally in encouraging its individual members in the conventional manner, it holds annual conventions, and publishes the bimonthly *American Journal of Sociology* and an annual volume of *Papers and Proceedings*. It is not only a member of the American Council of Learned Societies but also of the Social Science Research Council. The Society does not prosecute research directly and possesses no funds for such a purpose although it has a committee which compiles records of the sociological research in progress, the committee reports appearing in the *Papers and Proceedings*. The committee also cooperates with other committees and agencies in research and does what it can to foster research. The Society has developed specialized sections, such as rural sociology, educational sociology, and so on, and some of these

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[33] *The American Political Science Association*, a pamphlet (published by the Association, 1929), p. 4. There is also a Southwestern Political Science Association.

Those interested in research in government should acquaint themselves with the work of the Institute for Government Research established at Washington in 1916. Its functions have been to conduct scientific investigations in governmental administration and to promote improvements in administrative organization and procedure. Its publications of some sixty volumes are invaluable. They cover (1) Principles of Administration, (2) Studies in Administration, and (3) Service Monographs. The Institute was organized by private individuals and has been supported largely by the Laura Spelman Rockefeller Memorial Foundation and by Mr. John D. Rockefeller, Jr.

Late in 1927 the Institute for Government Research, the Institute of Economics, and the Robert Brookings Graduate School of Economics and Government were amalgamated and the Brookings Institution established. In this amalgamation the Institute of Economics and the Institute for Government Research retained their names and continue their activities as divisions of the Brookings Institution. This Institution is designed to cover a large proportion of the social sciences such as economics, government administration, political relations, history, law, and social organization. Dr. Harold G. Moulton became the president of the Institution, and is charged with the primary responsibility for formulating its general policies. It is supported by a memorial gift, the name of the donor being withheld.

have their own research committees which are coordinated with the general committee.[34]

(13) The Linguistic Society of America was organized in 1924 to advance the scientific study of language. It is by its very nature an organization of scholars, since the layman would hardly be attracted. Its present plans have committed it to research as an organization although apparently nothing of importance has been accomplished thus far. It publishes a quarterly journal called *Language, Language Monographs* (occasional), and *Bulletins of the Executive Committee.* It also has undertaken to publish at cost doctoral dissertations on linguistic subjects in a series called *Language Dissertations.* In addition, it has organized a Linguistic Institute in the form of summer courses of a graduate nature in linguistic subjects.[35]

(14) The History of Science Society was organized in 1924 and incorporated under the laws of the District of Columbia in 1925. Its purpose is to encourage the study of the history of science in all ages; it furnishes a connecting link between the natural and humanistic sciences, and has a membership not only national but international in composition. It is affiliated with the American Association for the Advancement of Science and usually holds its annual meetings with it or with the American Historical Association. It publishes a quarterly journal called *Isis* which ranks high among learned periodicals. The society, as such, does not conduct research, although its present corresponding secretary, who is also chief of the Smithsonian Division in the Library of Congress, does much to aid research workers in this field and in addition is compiling valuable bibliographies and conducting certain surveys which will be valuable when completed.[36] The society became a member of the American Council of Learned Societies in 1927.

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[34] A brief description of the nature and functions of the Society will be found on the inside of the cover of the *Papers and Proceedings.* See also Ogg, *op. cit.,* pp. 152-154.

[35] A brief account of the Society is found on the inside of the front cover of *Language;* in *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), pp. 43, 65; and in Ogg, *op. cit.,* p. 122. See *Linguistic Society of America,* Bulletin No. 2, Supplement to *Language,* compiled by Roland G. Kent (Sept., 1928), for an account of the Institute.

[36] *Isis* (Oct., 1923), Vol. VI, No. 1, pp. 4-8, 521-522; *The History of Science Society* (published by the Society as a continuing publication).

(15) *The Mediæval Academy of America* was organized in 1925. Originally it developed from a committee within the Modern Language Association of America which transferred it to the American Council of Learned Societies of which it became a standing committee in 1923. In 1925 it was incorporated as a separate organization and in 1926 became a constituent member of the Council. Its purpose is "to conduct, encourage, promote, and support research, publication, and instruction in mediæval records, literature, languages, arts, archæology, history, philosophy, science, life, and all other aspects of mediæval civilization, by publications, by research, and by such other means as may be desirable."[37] It publishes quarterly the *Speculum, a Journal of Mediæval Studies* which ranks high among scholarly periodicals, and an *Annual Progress of Mediæval Studies in the United States* published in cooperation with the University of Colorado. The Academy, in cooperation with the Heckscher Research Council of Cornell University, has published *A Concordance of Boethius,* by Professor Lane Cooper, and other volumes in the fields of philology and paleography are in preparation. The Academy has about $60,000 in a permanent fund and about $40,000 for specific undertakings. This Academy is devoted in a most outstanding manner to research and acts as a clearing house, both national and international, for all mediæval matters.[38]

The Social Science Research Council[39]

This Council, organized in 1923 and incorporated in 1925, is composed of twenty-one members representing seven national organizations, each organization appointing three representatives for a term of three years, one each year. The organizations represented are: the American Economic Association, the American Political Science Association, the American Sociological Society, the American Statistical Association, the American Psychological Association, the American Anthropological Association, and the American Historical Association. All of these organizations are interested chiefly in social research and "were brought together by a common feeling that closer cooperation in dealing with related and overlapping problems was eminently desirable. The Council purposes to bring together scattered or isolated workers upon similar social problems; to avoid needless duplication of effort; to foster the cooperation of research workers; to stimulate and encourage research in important fields not yet covered; to emphasize the development of increasingly scientific methods of inquiry in social studies; occasionally to undertake research directly through its own committee; to aid in the process of developing scientific social control and where that is not possible more intelligent and constructive theory about the processes involved in social relations." [40]

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[37] G. R. Coffman, "The Medieval Academy of America: Historical Background and Prospect," *Speculum* (Jan., 1926), Vol. I, pp. 5-18; *Bulletin No. 9 of the A.C.L.S.* (Dec., 1928), pp. 16, 65.

[38] *Ibid.*

[39] *Annual Report (for 1926) of the Chairman of the Social Science Research Council* (Chicago, Feb., 1927); *Annual Report of 1926* and *Fourth Annual Report, 1927-1928* (Social Science Research Council, 50 East 42d Street, New York, Nov., 1928); Ogg, *op. cit.,* pp. 6-7, 164-168.

The Council usually holds three meetings per year in which its fundamental policies are determined. Auxiliary to the Council are eight committees: the Executive Committee, the Committee on Problems and Policy, the Committee on Research Fellowships, the Committee on Scientific Methods in the Social Sciences, the Committee on Fellowships in Agricultural Economics and Rural Sociology, the Committee on Grants-in-Aid, the Finance Committee, and the Committee on Affiliations. In addition, there are nine advisory committees of the Committee on Problems and Policy: on Corporate Relations; on Industrial Relations; on International Relations; on Inter-racial Relations; on Population; on Social and Economic Research in Agriculture; on Business Research; on Problems of Philanthropic Financing; on Research in Familial Relations. There is also a special technical committee on the Measurement of Attitudes and Public Opinion.[41]

The Committee organization of the Social Science Research Council undergoes change from year to year as plans are fulfilled and new work undertaken. Two important committees, now extinct, were the Committee on Social Science Abstracts and the Committee on Annual Publication of an Index and Digest of State Legislation. The former committee was organized to develop a method by which significant abstracts of all social science periodical literature might be made available promptly to the students in this field. A subvention from the Laura Spelman Rockefeller Memorial Foundation made possible a journal as a vehicle for these abstracts, an editorial staff has been appointed, housed at Columbia University, and is beginning its publication work which appears in the form of the monthly *Journal of Social Science Abstracts.*[42] The Committee on Annual Publication of an Index and Digest of State Legislation was discharged in April, 1927, upon the successful completion of its work. Following joint action by this Committee and a committee of the American Library Association, Congress enacted a bill providing for a biennial index. After the discharge of the Committee, the Council authorized the appointment of a committee of five to cooperate in an advisory capacity with the Library of Congress, rendering any non-official assistance within its power.[43]

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[40] *Annual Report* (1926), p. 2.

[41] *Fourth Annual Report*. 1927-1928.

The most important single committee is that on Problems and Policy, to which most projects coming from the Council are referred, and which is charged with the general review of the field of research both general and specific, and with the initiating as well as the reviewing of projects.

It is the prime duty of the Committee on Fellowships to select qualified candidates to prosecute studies in the field of social research. These fellowships are not considered competitive with ordinary university fellowships but are designed for more mature persons of post-doctorate type or of equivalent intellectual maturity. They correspond roughly with the fellowships awarded by the National Research Council in the fields of the natural sciences. The fellowships are not limited in time, are adequate in amount, and are designed to afford unusual opportunity for special research on the part of men otherwise overburdened with other duties. It is the idea of the Committee on Fellowships that the fellowships should be used to promote the development of research workers, rather than to aid in the execution of research projects.[44] The Committee is particularly interested in aiding young instructors in finding inviting opportunities in research while they are still in their flexible years.[45]

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[42] See *Annual Report of 1927*, pp. 32-33, and *Fourth Annual Report, 1927-1928*, pp. 41-42.

[43] *Annual Report of 1927*, p. 32.

[44] The policies of this Committee are outlined by Professor Wesley C. Mitchell in the *Annual Report (for 1926) of the Chairman of the Social Re-*

The purpose of the Committee on Scientific Methods in the Social Sciences is to undertake an inquiry particularly into the methods and standards employed by social research agencies in the United States with a view to comparing these methods and of obtaining data valuable for the further development of social research.[46]

The work of various other committees, such as that of the advisory committees, is described in the *Annual Reports* of the Council. The general nature of their work is implied in their names. Summer conferences are held by the Council for the interchange of information and ideas among research supervisors and workers.

The Council has taken the position that it is not the purpose of the organization to foster centralized, standardized research conducted by groups, committees, and institutions, excluding and at the expense of the individual, but rather to devote itself to those activities which no individual can carry through alone. It protests that its purpose is to supplement and aid the individual, not to supplant him.

The constituent members of the Social Science Research Council

Of the seven organizations represented in this Council, all have been described briefly above except three:[47] the American Statis-

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search Council (Chicago, Feb., 1927), Appendix A, reprinted from the *Political Science Quarterly* (Dec., 1926), Vol. XLI, No. 4, pp. 604-607.

[45] In addition to the universities and colleges, several other organizations have entered the field of granting fellowships. Among them may be mentioned the following: the National Research Council, the John Simon Guggenheim Memorial Foundation, the Rockefeller Foundation, the American Institute of Architects, the Charles A. Coffin Foundation, the Carnegie Endowment for International Peace, the Music Fund, the Institute of International Education, the American School of Classical Studies, the American Schools of Oriental Research, Sigma XI, the Netherland-America Foundation, the American-Scandinavian Foundation. *Ibid.*, p. 16.

[46] A case book on methodology in social research is in the process of preparation by Professor Stuart A. Rice of the University of Pennsylvania.

[47] The constituent members described above are (with the pages where found): the American Economic Association, pp. 449-450; the American Political Science Association, pp. 450-452; the American Sociological Society; pp. 452-453; and the American Historical Association, pp. 448-449.

tical Association, the American Psychological Association, and the American Anthropological Association. The same excuse for a brief account of each of these is as applicable here as for the constituent members of the American Council of Learned Societies, namely, their nearness to the interests of the research worker in the social sciences.

(1) *The American Statistical Association* was organized in 1839, and since 1860 has maintained a continuous contact with the International Statistical Institute.[48] It is an association of a semi-democratic nature, membership being composed not so much of those merely interested in statistical work as of those competent to do it. Candidates for membership are admitted only upon approval of a membership committee. The organization does not engage in research as an organization and has no research committee or funds with which to prosecute such work, although it maintains jointly with the American Economic Association an advisory committee on the census and has a representative on the board of directors of the National Bureau of Economic Research.[49] It holds the usual annual conventions (and various local meetings during the year), publishes the *Journal of the American Statistical Association* (a quarterly published since 1888), and maintains an employment clearing house for statisticians at the office of its secretary-treasurer.[50]

(2) *The American Psychological Association*[51] was founded in 1892 and incorporated in the District of Columbia in 1925. Its general purpose is to advance psychology as a science and to foster research in that field, although it has no funds set aside for research and does not engage directly in research as an or-

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[48] See above, p. 380.

[49] Its other committees are: the Committee on Governmental Labor Statistics, the Committee on Institutional Statistics, the Committee on Educational, Scientific and Professional Standards, the Committee to Cooperate on the Project of an Encyclopedia of the Social Sciences, the Committee on Classification of Technical Statistical Workers in Government Service, and the Joint Committee on Standards for Graphics.

[50] *The American Statistical Association,* a folder on its history and functions (published by the American Statistical Association, New York, a continuing publication).

[51] *Handbook of Scientific and Technical Societies and Institutions of the United States and Canada,* Bulletin of the National Research Council (May, 1927), No. 58, p. 70.

ganization although it maintains a Section of Clinical Psychology and a Division of Consulting Psychologists.

Membership is open to those who have to their credit acceptable publications in psychological research and who have received the degree of Doctor of Philosophy based in part upon a psychological dissertation. Besides the full members (516 in 1927), a form of membership, called Associates (91 in 1927), is open to those devoting full time to professional work that is primarily psychological in nature, or to those who hold the degree of Doctor of Philosophy based in part upon a psychological dissertation and conferred by a graduate school of recognized standing, or to scientists, educators, or other distinguished persons whom the Council of Directors may recommend.

The Association is affiliated with the American Association for the Advancement of Science, the National Research Council, and the Social Science Research Council.

Besides holding annual meetings, it publishes the *Psychological Review* (bimonthly, 1894-), *Psychological Monographs* (irregular, 1895-), *Psychological Bulletin* (monthly, 1904-), *Psychological Index* (annual, 1895-), *Journal of Experimental Psychology* (bimonthly, 1916-), *Psychological Abstracts* (monthly, 1927-), and a *Yearbook.*

(3) The American Anthropological Association[52] was incorporated in the District of Columbia in 1902. It is the typical American democratic society, membership being composed of three classes, honorary, life, and regular. It fosters and encourages research among its members but has no funds set aside to enable the Association to engage in research directly.

It is affiliated with Section H of the American Association for the Advancement of Science, the Anthropological Society of Washington, the American Ethnological Society of New York, and the American Folk-Lore Society.

The Association holds annual meetings and publishes the *American Anthropologist* (New Series, a quarterly published since

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[52] *Handbook of Scientific and Technical Societies and Institutions of the United States and Canada,* Bulletin of the National Research Council (May, 1927), No. 58, p. 18; *Index Generalis* (Editions Spes, Paris, 1927-1928), p. 984; *American Anthropologist, U. S.* (Jan.-Mar., 1903), Vol. V, No. 1, pp. 178-192.

1899 jointly with the Anthropological Society of Washington and the American Ethnological Society of New York; old series, Vols. I-XI, published under the auspices of the Anthropological Society of Washington, 1888-1898), *Memoirs of the American Anthropological Association* (irregular, 1906), Vol. I, Part I, published in 1905 under the title *Memoirs of the American Anthropological and Ethnological Societies* by the American Ethnological Society of New York.

Research in the universities and colleges

(1) Desirability of universities and colleges as research institutions. It is rather generally agreed that universities and colleges are the chief sources of training of research workers in every field of science and as a result should be encouraged to advance research in every manner possible. It is believed, also, that their atmosphere, facilities, environment, and broadening influences and contacts are more conducive to satisfactory research than are the characteristics of any other type of institution yet devised. Institutions devoted solely to research often have a deadening influence upon the worker; the dull monotony of continuous research deters many scholars from entering such organizations. The university, if properly balanced in its functions, affords a wholesome and inviting variety. The combination of teaching and research, whether conducted simultaneously or alternately, prevents either from degenerating into a deadening monotony.

Research and high-grade teaching are interdependent; no teacher can be at his best unless he is engaged in research in the fields of his teaching, and practically no one competent to give an opinion would deny that research and teaching are the two functions of a university. A university is really fulfilling its true functions only when its faculties are training scholarly investigators and carrying on research themselves.[53]

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[53] Considerable information on what is being done by universities in educational research may be secured from Carter V. Good, *How to Do Research in Education* (Warwick and York, Inc., Baltimore, 1928). While this is a book on methodology in education, it includes an extensive bibliography and gives much information regarding this aspect of the research conducted by universities. See also Walter S. Monroe and Max D. Engelhart, *The Technique of Educational Research*, University of Illinois Bulletin, No. 19 (Urbana, Ill., 1928); William C. Trow, *Scientific Method in Education* (Houghton Mifflin Co., Boston, 1925); Claude C. Crawford, *The Technique of Research in Edu-*

(2) The status of research in universities and colleges. A study of the status of research in universities and colleges reveals that many of them fall far short of these ideals. In fact, most of the colleges may be eliminated from the discussion since their faculties devote themselves almost exclusively to teaching. Colleges, in general, especially when not a part of a university, are usually mere pumping stations and during the conventional four-year undergraduate period of the student's life endeavor to pump as many facts into his head as his addled brain can hold. The faculties, in the main, are interpreters of textbooks and funnels through which the materials of the college library are brought to bear upon the student. Rarely are the college students taught to find facts and almost never are they given a formal course in methods of research. If Karl Pearson should be correct that about ninety per cent of accumulated facts escape from one's mind, then it appears that nearly ninety per cent of the efforts spent in the undergraduate colleges are misdirected and the educational methods call for a reappraisal and overhauling. If it be true that the methods of finding facts and of solving problems are the most lasting and valuable parts of the educational processes which can be carried from college, then colleges must change their points of attack and emphasis; they must lay less stress upon fact accumulation and more upon principles, theories regarding problems, and the methodology of testing theories and of solving problems.[54]

Not only do most of the colleges not stress research and methodology in teaching but most members of such college faculties contribute little or nothing to knowledge through research.

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cation (University of Southern California, Los Angeles, 1928); Truman L. Kelley, *Scientific Method: Its Function in Research and in Education* (Ohio State University Press, Columbus, Ohio, 1929).

[54] Upon these points the comments of Laski, *op. cit.*, p. 300, are interesting. He says: "I taught in American universities for four years; and I have had many American students since my return to London. My difficulty with them has always been that, though they have been taught to assimilate masses of fact, they have rarely learned to reflect upon the scheme of values they ought to read into those facts. . . . Only principles at this stage will cause them the intellectual excitement which is the main business of him who teaches undergraduates; and the passion for pouring upon him masses of concrete description prevents him from penetrating beyond them to their real significance."

The general excuse is that since no graduate work is done there is no need for research. In addition, a large proportion of college faculties are not trained for research and have little interest in it. Many college presidents, likewise, are without training or interest in research and are inclined to place no pressure upon their faculties in behalf of research. Moreover, teaching schedules in colleges are heavy and demand practically all the time and energy of the teachers. Any available time ordinarily is devoted to extra-curricula activities, committee work, and social activities. Other factors militating against research by college faculties are the limited library and laboratory facilities and the low salary schedules. The low salaries cannot induce capable persons interested in research to join college faculties with limited research facilities.

There are exceptions among some of the American colleges, particularly among those heavily endowed, where teaching schedules are reduced, chairs are endowed, funds for research are established, salaries are relatively high, or where the colleges are located in important centers which offer adequate outside facilities for those faculty members interested in doing research.[55] Probably one-fourth of the colleges of the country do nothing in research. This is particularly true among the small colleges supported by religious denominations and it is especially marked where sectarianism is rampant. In some of these schools a truly scientific man would not be tolerated and of course such schools cannot secure such men for their faculties. Such schools appear to fulfill no good social purpose. They turn out poorly equipped graduates and are factories of biases, sectarianism, and intolerance.[56] Barring the exceptions, the preceding generalizations, in the main, are true and it is quite possible that in the future research will occupy a larger and larger place in the training of the college student, in which case the lives of all but the best colleges—those fostering research—will be endangered if not ended. A possible solution may be found in converting the typical small college into a junior college, thus leaving the field of research to the universities and leading colleges.

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[55] For an account of the research done by some of the exceptional colleges, see Ogg, *op. cit.*, Chap. VI.

[56] One occasionally hears such colleges claim that it is their function "to teach the students how to live, not how to make a living." The answer appears to be that they accomplish neither and that the two purposes are inseparable.

In universities, where most of the research is carried on, research in the social sciences is lagging behind research in the exact sciences whether the research be pure or applied. This is due to the fact that the great progress of the modern age is due to the achievements of the exact sciences. The certain and tangible results coming almost daily from the laboratories of the exact scientists are a constant source of wonder and are in marked contrast to the results which come from the studies of the research workers in the social sciences. As a result, philanthropists, governments, and foundations show little hesitation in endowing chairs, establishing laboratories, and building science buildings whenever needed. And the results have justified their confidence. The social sciences, by way of contrast, have accomplished so little relative to the exact sciences and their methodology is so unscientific in nature, that they fail to inspire confidence or awaken the interest of the general public or those with resources to endow chairs, build buildings, and finance such research. These facts have made it easier for the exact scientists to press their claims and this they have done. The social scientist has done relatively little in the way of pressing his claims for endowment because he is able to offer so little of immediate tangible value in his own defense. As a result, the contrast appears to be cumulative in nature.

University research remains largely individualistic in nature although a few universities have created research institutes, bureaus, and committees, to engage in research or supervise or develop general university policies regarding research. Opinions are divided as to how valuable these centralizing bodies are. Most research men of high caliber doubtless would resist any curbing or dictation. The very nature of research makes any interference on the part of committees dangerous.[57]

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[57] On this point, see Laski, *op. cit., passim.* He says in part (p. 303), ". . . if we look at the history of scientific research, the great discoveries do not, somehow, seem to have come in this way [through cooperative and committee research]. They have been rather a matter of some lonely thinker brooding in solitude upon the meaning of facts from the significance of which he cannot escape. He gets a sudden moment of illumination, and he proceeds to test the

While direct financial support to university research is on the increase particularly in the fields of exact sciences, much, if not most, of the research done in universities is done without any direct assistance.[58] Most of the faculty members conduct their research while teaching and carry it on as an extra load, although the most progressive and heavily endowed institutions aid by reducing teaching hours or by granting leaves of absence on fitting occasions to those who are capable of conducting scholarly research. Endowed universities as a whole do more research relatively than do State universities since the former are the more common recipients of research funds and are under less pressure to maintain a heavy teaching schedule. Cooperative research also is further advanced in the endowed than in the State universities. It also may be observed that most of the members of university faculties are really of the college rather than of the university or research type. They are teachers with little interest in research and belong to college or high school faculties as constituted at present rather than to university faculties.

(3) Impediments to university research. The outstanding impediments to research in the universities are recognized rather generally. Research men often are not given rewards comparable to what administrators or popular teachers secure, although this mistake is being corrected slowly. This is but a reflection of the general American attitude of not respecting the importance or possibilities of scholarship in the social sciences. The teaching load of research men often is not adjusted in a manner to facilitate research; insufficient clerical assistance is provided; the lack of a sabbatical system in some universities is a handicap; relatively few universities provide funds for sending responsible faculty members to meetings of learned societies; not enough attention

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hypothesis by finding whether it will fit the facts at his disposal. So, at least, inspiration seems to have come to Newton, to Darwin, to Clerk-Maxwell, to Einstein. . . .

"So, too, in the social sciences. The great inventive minds, Plato, Hobbes, Rousseau, Hegel, Bentham, do not seem to have been natural members of committees. . . . [Cooperative research] in its newer forms, it seems to me to raise hopes unlikely of fulfillment."

[58] For a summary of what is being done in the social sciences for twenty-six universities in the Association of American Universities, see Ogg, *op. cit.*, pp. 25-33 and Chap. IV.

is given to the building up of libraries fit for research, a fact particularly true of State universities; in some universities no effort is made to impress upon the faculty that research is a part of its functions, a situation often due to the fact that the presidents, deans, and administrative officers are not interested in or trained in research and have failed to understand its value; rarely are formal courses in scientific methods of research offered; too much elementary teaching is insisted upon and not sufficient leisure permitted for research; there are too many college and not enough university professors; too many administrative and committee duties are pressed upon men capable of valuable research; the inviting rewards in other fields of activity attract many scholarly men from academic life; the greatly increased number of undergraduates and poorly qualified graduates who are pressing harder and harder upon college faculties encroach upon the time of these research faculties, even though most of these undergraduates and a large proportion of graduate students have no genuine scholarly or intellectual interests and are unable to arrive at an intellectual level at which they are able to appreciate the value of contacts with advanced research faculties; there is a constant and terrific pressure for immediate and practical results which is difficult to resist when it is realized that promotion, if not the question of tenure, is involved, and this begets haste and superficiality; the common lack of appreciation for careful research, or a secret if not open contempt for it, by those who hold the reins of authority demoralizes those scholars who do not have the financial resources to enable them to assert their independence when unappreciative or capricious action of those in power curbs their best work; graduate work often is not organized properly or clearly separated from the undergraduate; proper machinery for promoting graduate courses and graduate research often is lacking, much of it being little if any better than that provided for undergraduate teaching.[59] Competent critics appear to agree that the tendency is to put too many courses in the graduate schools with so much accompanying machinery that students are prevented from doing independent research work. There are too many informational courses of an undergraduate nature which have no place in a graduate curriculum and which delay entrance upon problem and research courses with the attendant results that the emphasis upon methodology is entirely inadequate. Dean Woodbridge of Columbia University put his finger on a fundamental defect in the general situation when he said: "So long as graduate students are expected to be immature students in need of a schoolmaster, so long will university professors be schoolmasters and not scholars. When once graduate students are expected to stand on their own feet and take the responsibility for their own education, then university professors may devote themselves to those researches which alone justify their existence. . . . Its [the graduate school's] business is in no sense to teach the ignorant. Its sole business is the advancement of learning. Its administration and its degrees should be controlled by that end." [60]

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[59] See for support of this general position those most interesting and enlightening remarks of Dean Woodbridge in his *Annual Report of the Dean of the Graduate Faculties* (Columbia University, 1927), *passim.*

(4) Needed corrections. The teaching load of the proper men should be adjusted to permit research since research and teaching are the two functions of a university. There has been no clear-cut plan offered to cover all cases. It appears that general administrative officers must rely upon the recommendations of chairmen of departments with respect to the individuals in the respective departments, holding the chairmen responsible for the results. Increased recognition should be given to research men and sufficient inducements offered to prevent them from entering other fields; graduate courses should be organized for the purpose of fostering research; all graduate students should be given careful training in methodology and there seems to be every reason to believe that seniors in colleges should not be permitted to graduate without some training in methodology. In some universities a general research council might be of service as an advisory body studying ways and means of advancing the research interests of the university, and in seeing to it that the general policies of the university are mature and well-advised with respect to methods of

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[60] *Annual Report . . . for the Year Ending June 30, 1921,* Columbia University Bulletin of Information (New York, 1922), pp. 126, 134; also quoted in *Bulletin of the American Association of University Professors* (April, 1922), Vol. VIII, No. 4, p. 40; and in Ogg, *op. cit.*, pp. 72-73.

fostering research. Such a body not only should leave individual research workers unhampered but should consider it one of its principal functions to protect and foster the interests of those individuals engaged in research. The university, either through a central committee, or otherwise, should publish an annual survey of what is being done in research; this alone would constitute a wholesome pressure upon the lazy and indifferent members of the faculty and upon those who seek to advance themselves by means other than by producing genuinely scholarly results. Libraries should be enriched for research; endowments should be secured for graduate professorships; research professorships should be provided for professors emeritus; more research assistantships and fellowships should be provided; sabbatical years should be insisted upon. More room should be made for research in colleges if the best results in teaching are to be secured. Above all it is the duty of the genuine university to take a pronounced and advanced stand in behalf of research at every opportunity. President Butler put it correctly when he pointed out that "It is a chief function of a university to seek out scholarship, to advance scholarship, to reward scholarship."[61] Johns Hopkins University unquestionably is working toward the ideal situation, at least in so far as the third- and fourth-year undergraduate and the graduate work is concerned, since it devotes its resources primarily to advanced or graduate courses, to research, and to the training of research workers. The outstanding contributions to knowledge made by the university are ample justification of its plans.

Foundations and research

Some of the most important contributions in modern science, whether exact or social, have been made possible only because of the interest and assistance of some of our leading foundations. The place they occupy can hardly be overestimated; some of them without doubt rank among the most beneficial of our social institutions. A notable characteristic of them is the rapidity with which they are multiplying both in number and in size. Julius Rosenwald took occasion to point out recently that "Within a period of fifteen years recently passed $2,500,000,000 was presented to capitalized public welfare in the United States—a sum equal to the entire wealth of the country a century ago. Scarcely a week passes without the announcement of a bequest of some large private fortune to educational, social or artistic endeavor. Though formerly such bequests commanded columns of space in the press, they have today become so little of a novelty that the newspapers dismiss them with a few paragraphs.

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[61] *Annual Report . . . for the Year Ending June 30, 1923,* Columbia University Bulletin of Information (New York, 1924), p. 10.

"Fifty of the largest foundations in the United States, whose aggregate sums reach a total of nearly $1,000,000,000, devote themselves very largely to the support of institutions having as their aim the alleviation of human suffering. Individuals or groups who have come to grief in the social organization are helped to rehabilitate themselves. Modern philanthropy searches out the sore spots of civilization and tries to make them whole." [62] In 1926 the Russell Sage Foundation had listed over 120 important foundations.[63] Their creation and operation have become a major industry in the United States. With some 30,000-40,000 millionaires in the United States [64] it is reasonable to infer that many more will be established.

As the most casual reader must know the purposes of these many foundations are extremely diverse. Some are devoted to broad general purposes such as the promotion of the general well-being of mankind, while others are charged with narrower and more specific duties. We are concerned here only with the principal ones which contribute most to research.[65]

Some of the most outstanding foundations or rather groups of foundations, with dates of origin, which may be considered as indicative of general trends, are: (1) The Carnegie group composed of the Carnegie Institute of Pittsburgh (1896), the Carnegie Institution of Washington (1902), the Carnegie Hero Fund Commission (1904), the Carnegie Foundation for the

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[62] Julius Rosenwald (as told to Elias Tobenkin), "The Burden of Wealth," *The Saturday Evening Post* (Jan. 5, 1929), pp. 12*ff*.

[63] *American Foundations,* Bulletin of the Russell Sage Foundation Library (Aug., 1926), No. 78.

[64] Carl Snyder, before American Statistical Association, as quoted in *The New York Times* (Dec. 28, 1928), Vol. LXXVII, No. 25,906, p. 11.

[65] For a fuller treatment see Ogg, *op. cit.,* Chap. XV.

Advancement of Teaching (1905), the Carnegie Endowment for International Peace (1910), and the Carnegie Corporation of New York (1911); (2) the Rockefeller group composed of the General Education Board (1903), the Rockefeller Foundation (1913), the Laura Spelman Rockefeller Memorial (1918), and the International Education Board (1923);[66] (3) the Russell Sage Foundation; and (4) the Commonwealth Fund.

It is impossible to give more than the most general account of the functions of each of these foundations. Our first consideration here is to present a general picture of the place occupied in research by foundations. The ones mentioned here are chosen because of their importance but no effort can be made to acquaint the reader fully with the work of each of these foundations. To give even an outline picture of the important work covered by these foundations is impossible. For such information the reader must seek other sources.[67]

The chief purpose of the Carnegie Corporation of New York is to support the already existing institutions which Mr. Carnegie had established, namely, the Carnegie Institute of Pittsburgh, the Carnegie Institution of Washington, the Carnegie Hero Fund Commission, the Carnegie Foundation for the Advancement of Teaching, and the Carnegie Endowment for International Peace, and to provide an endowment, the income of which shall be available to the trustees of each generation for the "advancement and diffusion of knowledge and understanding among the people of the United States (since 1917 extended to Canada and British Colonies), by aiding technical schools, institutions of higher learning, libraries, scientific research, hero funds, useful publications, and by such other agencies and means as shall from time to time be found appropriate therefor."[68] In general, this foundation devotes most of its attention to aiding other existing agencies financially rather than devoting itself directly to research and the other mentioned activities. The chief and general purpose of the Carnegie Institution at Washington is "to encourage in the broadest and most liberal manner investigation, research, and discovery, and the application of knowledge to the improvement of mankind," its chief interests being in the fields of physics, biology, and astronomy. It is one of the few foundations which devotes a considerable part of its resources directly to research; it does this through approximately a dozen departments.[69] The general purpose of the Carnegie Endowment for International Peace is implied in its name. Its activities have been extensive, vital, and educative, and while it engages in little research directly it provides the agencies for research and the means for publishing and popularizing truly scientific work designed to hasten the abolition of war. The Carnegie Foundation for the Advancement of Teaching and the Carnegie Institute of Pittsburgh are not concerned especially with research although of course they are interested in scholarly activities, at least indirectly.

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[66] In January, 1929, the Rockefeller Foundation, the Laura Spelman Rockefeller Memorial Foundation, and a portion of the work of the International Education Board were consolidated into a new corporation known as the Rockefeller Foundation with total net assets of $168,000,000. From this reorganization two large and well-endowed Rockefeller boards have emerged: the General Education Board with a Federal charter which limits expenditures to the United States, and the Rockefeller Foundation, incorporated under the general laws of New York State. Since their founding the various Rockefeller boards not only have distributed all their incomes but have appropriated $225,000,000 of capital funds to social and medical work. In 1928 the China Medical Board was incorporated with a self-perpetuating board of trustees, quite independent of the Rockefeller Foundation. See *The Rockefeller Foundation, A Review for 1928,* by George E. Vincent, President of the Foundation (New York, 1929), pp. 13-16.

[67] See Ogg, *op. cit.,* Chap. XV; *American Foundations,* Bulletin of the Russell Sage Foundation Library (Aug., 1926), No. 78; Henri Reverdin, *United States of America. The Principal American Foundations,* League of Nations Committee on Intellectual Cooperation, Brochure No. 11 (Imprimeries réunies, Chambéry, 1923), pp. 5-10; and the special bulletins published by the respective foundations.

In the Rockefeller group the Rockefeller Foundation has as its chief objects the promotion of the well-being of mankind throughout the world by advancing public health and by advancing knowledge in the medical sciences, in the natural sciences (by taking over the foreign program of the International Education Board), in the social sciences (hitherto administered by the Memorial), and in the humanities. It is cooperating in building up a medical center for teaching and research in Lyons, France; in 1928 it aided some eighteen medical schools from the University of Edinburgh to the American University at Beirut; it has provided for the autonomy of the Peking Union Medical College; it has been leading a fight on the strongholds of yellow fever; it has aided the southern United States in the control and prevention of hookworm disease; it aided in financing health organizations in the regions of the United States floods; it aided, during 1928, 263 health projects in twenty-four different countries; it has maintained eight hundred Fellows from forty-six countries in the various fields of public health service; and it cooperates with many other councils and research organizations. In 1928 it was obliged to decline 462 of the formal applications for aid which it received. It does not make gifts or loans to individuals or contribute to the building or maintenance of churches, hospitals (except as certain hospital features may be included in plans for medical education), or other local institutions, or support campaigns to influence public opinion on social or political questions.[70]

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[68] Reverdin, *op. cit.*, pp. 5-10.

[69] An important department of Historical Research was added in 1903. See Reverdin, *op. cit.*, pp. 5-10.

The chief purpose of the General Education Board is not to engage in research but to aid existing institutions, particularly public schools, colleges, and universities, in the advancement of education. For example, its main activities have been the promotion of practical farming in the Southern States, cooperation with State universities in the development of a system of public high schools, rural schools, and schools for Negroes in the Southern States, the development of university medical research, and the encouragement of educational research and experiment.

The Laura Spelman Rockefeller Memorial was incorporated for the general purpose of promoting human welfare without respect to geographical limitations. It has attempted to lend support to the solution of worthy fundamental problems in the fields of social welfare and social betterment. It has given much important support to the social sciences generally and has aided many of our leading universities and colleges by providing research facilities. Problems in the field of child development, child guidance, parental education, mental and social hygiene, and of interracial relations have received special attention. Its gifts have been many and highly diversified and the aid to research has been of paramount importance.

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[70] *The Rockefeller Foundation, A Review for 1928* (New York, 1928), *passim.*

The Russell Sage Foundation has as its chief object the improvement of social and living conditions in New York City and, within limits, in the United States outside of the city. It is a great sociological foundation and not only aids other institutions and agencies in research but itself engages in much valuable research. It, along with the Carnegie Institution of Washington, is one of the few foundations which engages in research. Its value in all aspects of sociological work hardly could be overestimated.

The Commonwealth Fund is interested in such benevolent, religious, educational, and like problems of an eleemosynary character as seem to it appropriate and desirable. Its general purpose has been more philanthropic than educational although recently it has turned to the support of various and important educational research projects.

Despite the generality of treatment of these leading foundations —and this does not imply that many others are not equally worthy of general mention—certain general tendencies may be observed, and it is in these that we are interested primarily: The foundations interested in research, with relatively few exceptions, do not engage in research themselves but aid through financial support of existing or specially created agencies which carry on the work. More and more foundations are turning to the support of research so that the outlook for creative scholarship, especially in the social sciences, is becoming more encouraging. As yet, the demands for aid far exceed the support which can be given, with the result that the directors of the foundations are constantly harassed by those seeking funds. So many worthy purposes call for attention that wise administration of the funds calls for careful discrimination on the part of the administrators. As a result, funds are rarely granted to individual investigators; foundations prefer to place their funds in the hands of important and responsible organizations for administration. Another reason for this is the fact that foundations ordinarily are interested in large, fundamental questions which are too large for one or a few individuals to cope with; hence institutions, councils, and research institutes are the usual beneficiaries, and probably wisely so.

Some people have shown a somewhat skeptical attitude regarding the effect of the large gifts made by such foundations to universities for research. It is insisted that independence of research is endangered and that the universities themselves are placed in an embarrassing position by accepting gifts for specific purposes. Harold Laski, as an example, points out that regardless of how far-sighted and enlightened the donors may be, regardless of the fact that they do not have the slightest intention to control a university through gifts, they cannot help it. "A university principal who wants his institution to expand has no alternative except to see it expand in the directions of which one or other of the foundations happen to approve." [71] He continues: "And how conceivably, can the teacher whose work fits in with the scheme of the prospective endowment fail to appear more important in the eyes of the principal or his trustees than the teacher for whose subject, or whose views, the foundation has neither interest nor liking? What possible chance has the teacher of an 'unendowed' subject to pull an equal weight in his institution with the teacher of one that is 'endowed'? . . . The college develops along the lines the foundation approves. The dependence is merely implicit, but it is in fact quite final." [72] While this may be a problem in some cases it certainly is minimized by the fact that the heads of practically all of the most important foundations are thoroughly aware of the problem and, being for the most part men of genuine enlightenment and with altruistic principles, succeed in reducing the problem to a minimum. The present tendency is toward a hands-off policy once the funds are given and it seems clear that the gains to the beneficiaries far overbalance any possible dangers. Indeed, it appears that if there are real dangers they lie more within the beneficiaries themselves—to some of their own tendencies to be subservient—than to any pressure from the foundations. In general, it seems to be the institutions' own fault if they are not independent.

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[71] *Op. cit.*, p. 301.

[72] *Ibid.*, pp. 301-302. For a further discussion of this question, see also Hans Zinsser, "The Perils of Magnanimity," *Atlantic Monthly* (Feb., 1927), pp. 246-250, and F. A. Ogg, *op. cit.*, pp. 330-334. Mr. Zinsser takes the position that "this apprehension is based on more than the unworthy caution of suspicious natures." He admits however that thus far the benefits have been worth the risk and that the risk can be eliminated by a slight adjustment in the policies of foundations. He believes this can be accomplished if foundations will determine the needs for funds and then give them without restrictions.

This solution of course does not meet Mr. Laski's criticisms, but the latter appear to be rooted in the weaknesses of human nature and are not peculiar to the relationships between foundations and universities.

Without the slightest doubt our leading foundations are on the whole beneficent institutions; society would be poorer without them; and research would lag far behind where it is were it not for the vision and aid of many of these enlightened and unselfish donors of wealth.

CHAPTER XVIII

INDUSTRIAL, COMMERCIAL, AND SOCIAL RESEARCH

Research in industry

Large, well-organized manufacturers have learned the value of research in industry; they recognize that it is the price of progress, and among them research is becoming a factor of steadily increasing importance. Indeed, our largest and most progressive businesses are lavish in their expenditures of funds for research, whether pure or applied. For them research not only has justified itself but it has been the foundation of huge fortunes. The E. I. du Pont de Nemours & Co., Incorporated, originated in research, developed to its present mammoth size as a result of research, and has made fortunes because progressive and enlightened research methods have been cultivated with extreme care. Mr. E. I. du Pont who came to this country in 1800 had received his early training under the Frenchman, Lavoisier, the Father of Chemistry, and knew the value of research. In its multitudinous developments, the company has employed at one time as many as 1200 chemists and spent in a single year $3,000,000 in research.[1] The

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[1] For a fuller and more enlightening account of the research conducted by this and many other important businesses, see Arthur D. Little, *The Handwriting on the Wall* (Little, Brown, and Co., Boston, 1928), *passim,* and Maurice Holland with Henry F. Pringle, *Industrial Explorers* (Harper and Brothers Publishers, New York, 1928), *passim.*

Dr. Little's thesis may be surmised from the title: Every business which expects to maintain itself and compete effectively in these modern times must lay more stress upon research, otherwise it soon will see "The Handwriting on the Wall."

The reader should consult also Robert M. Davis, *Research A Paying Investment,* a pamphlet (Division of Engineering and Industrial Research, 29 West 39th St., New York, 1928). Also published in *Factory and Industrial Management* (Oct., 1928). This pamphlet is an analysis of what 800 manufacturers think of research. Its value is appraised in terms of dollars and cents. The study is based on a survey made by Maurice Holland for the National Research Council. Only three of the 800 executives questioned are of the opinion that research does not pay and this minority trio is made up of executives of comparatively small concerns. Out of 797 of the manufacturers who believe in the profitableness of research, 68 per cent maintain research

American Telephone and Telegraph Company, through its subsidiary, the Western Electric Company, maintains a research staff of over 1500 chemists and engineers engaged in development work alone.[2] The Eastman Kodak Company is what it is because Mr. George Eastman, as a result of his early training, appreciated the value of the highest type of research conducted by the best-trained scientists in elaborate laboratories. He searched for the best men he could obtain, and to head his laboratory he secured Dr. C. E. Kenneth Mees. Like all far-sighted industrialists, Mr. Eastman placed in charge of his laboratories the best men he could secure, then permitted them to work in a manner to be dictated by themselves. In such laboratories research is not only of an applied nature but much, if not the most important, of it is of the fundamental or pure nature, a type that taxes the patience of the short-sighted and impatient industrialist. Dr. Mees not only has made his laboratories preeminent through research in fundamentals but in addition he has worked out an unusually fine balance between the fundamental and applied divisions of his scientific staffs.[3]

Of the same brand of progressiveness is the General Electric Company which has placed at the head of its laboratory Dr. Willis R. Whitney. Few laboratories are placed on a footing as independent as the General Electric Company's laboratory which is concerned not so much with applied as with fundamental research. The independence of Dr. Whitney and his colleagues has more than justified the purposes and methods of the laboratories since the discoveries and new developments which have emanated from the laboratories have been most far-reaching in the electrical field. The value of such fundamental or pure research is recognized by all leading scientists and far-sighted industrialists. The late Dr. Charles P. Steinmetz expressed the general view of these men when he said, ". . . there is no scientific investigation,

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laboratories. A brief summary of Maurice Holland's study is found also in *Recent Economic Changes* (McGraw-Hill Co., New York, 1929), Vol. I, pp. 106-107.

[2] Little, *op. cit.*, p. 42.

[3] Little, *op. cit.*, pp. 41, 55; C. E. Kenneth Mees, *The Organization of Industrial Scientific Research* (McGraw-Hill Book Company, Inc., New York, 1920), *passim.* This book, which deals with some sixty of the leading laboratories, includes an excellent bibliography on industrial research.

however remote from industrial requirements, which might not possibly lead to industrially useful developments.

"Experience, indeed, has shown that it is rare that sooner or later some industrially valuable results do not follow, no matter how abstruse and remote from apparent utility a scientific investigation may appear, and any scientific research whatsoever is thus industrially justified."[4]

Dr. Mees, in explaining the origin and development of modern technical industries, offers an explanation which has been overlooked by some historians of economic developments, particularly in their explanations of the localization of industries. He says: "If one attempted to formulate the common belief concerning the origin and development of modern technical industries, it would probably be found that stress would be laid upon financial ability or manufacturing skill on the part of the founders. But if, instead, we were to make a historical survey of the subject, we should find that the starting and development of most manufacturing businesses depended upon discoveries and inventions made by some individual or group of individuals who developed their original discoveries into an industrial process. . . .

"The history of many industries is that they were originated and developed in the first place by some man of genius who was fully acquainted with the practice of the industry and with such theory as was then known; that his successors failed to keep up with progress and with the theory of the cognate sciences; and that sooner or later, some other genius working on the subject rapidly advanced the available knowledge and gave a new impetus to the development of that industry in another locality."[5] This picture of what happens to industries which do not engage in research and thereby keep abreast of the times serves as ample justification for the timely warning given by Dr. Little in *The Handwriting on the Wall.*

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[4] Charles P. Steinmetz, "Scientific Research in Relation to the Industries," *Journal of the Franklin Institute* (Dec., 1916), p. 712; Mees, *op. cit.*, p. 3.

"The president of a chemical manufacturing company places literary research ahead of work in the laboratory. 'We employ,' he writes, 'as part of our extensive organization, one chemist who can read several languages and who devotes his entire time to reading current and past literature. Every problem starts from this form of research before it is handed over to another department. From this constant reading, our staff is kept abreast of latest developments in the field.'" Davis, *op. cit.*, p. 7.

[5] *Op. cit.*, pp. 5-6.

The great triumphs of the most important industrial concerns of the world are too well recognized to justify any attempt to recount them in the brief space permitted. Neither will space permit even the most summary description of the work being done by the most outstanding industrial research laboratories.[6] Only the outstanding lessons growing out of the experiences of industries with respect to research may be considered and these have been stated and illustrated in a most striking manner by Dr. Little.

Large industries headed by scholarly men are the ones which are employing research and are profiting by it; the smaller ones —the great mass of manufacturers—do not employ research methods extensively, require teaching, and in many cases are openly hostile to it. Dr. Little pictured their attitude well when he said, "When under these conditions they fail to make a satisfactory profit in competition with more enlightened Germany, they jack up the tariff. They ignore research, which offers them better protection than any rate of duty. They are blind to the handwriting on the wall."[7] He insists that this handwriting "is on the walls where Rotary Clubs lunch, where manufacturers' conventions dine, where chambers of commerce meet, and where trade associations gather," but it evidently is looked upon as a mural decoration. Its true meaning is that *"The price of progress is research which alone assures the security of dividends."*[8] Science is advancing at such a rapid rate and with such far-reaching influence that no industry can hope to ignore research and live. In this respect, Europeans have a distinct advantage over us in the United States.[9] They trust research. This has been particularly true of the Germans, and while the lesson should be clear to all it has been appreciated only by our largest and best industrial enterprisers. The trend of the research curve, as pointed out by Dr. Little, is steeply upward and the industrialist who fails to read the signs of the times soon will find his business passing into the hands of others. "The laboratory has become a prime mover for the machinery of civilization, and there is a direct obligation upon industry to support research with the generosity of an enlightened self-interest, for research is the mother of industry."[10] In yet another place he says: "The complexity of modern industry and the intense competition between nations now require that any industry, to maintain its place, must consciously and unremittingly search out and apply those fundamental facts and principles with which its operations are concerned. Failure to do this spells ultimate disaster. . . .

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[6] The reader should consult the writings of such men as L. H. Baekeland, Arthur D. Little, C. E. Kenneth Mees, P. G. Nutting, Charles P. Steinmetz, M. C. Whitaker, Willis R. Whitney, and others. On the contribution of science to manufacturing, see especially Little, *op. cit.*, Chap. II, and Davis, *op. cit., passim.*

[7] *Op. cit.*, pp. 3-4.

[8] *Ibid.*, p. 5.

[9] For a picture of the situation in Canada, see Frank D. Adams, "Industrial Research in Canada," *Annals of the American Academy of Political and Social Science* (May, 1923), Vol. CVII, pp. 115-119. Industrial research in Canada is lagging if compared with such countries as Germany, but Canada is taking

"In a very real sense Research is the Mother of Industry and may even dispute with Necessity the parentage of Invention."[11]

David Sarnoff, general manager of the Radio Corporation of America, has expressed well the same point of view in his coined expression "supplantive competition." With his eye on the scientific developments in business which are shown in the competition between the new and the old, he says: "The needs of the times will bring forth, perhaps, a new type of executive, trained in a manner not always associated with the requirements of business management. He will have to reckon with the constant changes in industry that scientific research is bringing. He will have to be able to approximate the value of technical development, to understand the significance of scientific research.

"He will be equipped with an even and exact knowledge of the relationship between his business and similar businesses in the same field; between his industry and other industries which it may affect or be affected by; between business and government; and even between business and politics, for no great industrial enterprise is safe from political attack . . . .

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stock of herself, is alive to the necessity of advancing such research, and is effecting organizations with this purpose in view.

[10] *Ibid.*, p. 15; see also his pp. 10 and 14.

[11] *Ibid.*, pp. 51-52.

"The competition which may make as well as mar, depending upon the breadth of view in modern industry, is the competition between the old and the new, between those who have made better rat traps which caused the world to mark a path to their door, and those who have invented a product, developed a method, or found a means, that would make rat traps unnecessary." [12]

Research in industry has assumed various forms. There are the so-called convergent laboratories, those devoted to a single general purpose; the divergent, those devoted to many industrial problems or to science in general, most industrial laboratories being of this nature; and cooperative laboratories of various types. In addition, the government research laboratories may take an active part in aiding industries through research.[13] Some aid also comes from research laboratories established by foundations and from university laboratories.

Relatively few industrial laboratories are of the convergent type since the problems of industry usually are so varied in nature that several types of scientific research are called into existence. An astronomical laboratory or observatory by its nature is convergent. In the same class would fall radium, geophysical, certain electrical and chemical laboratories—all those in which the research is directed toward one common end. The Nela (National Electric Light Association) Park Laboratory, concerned with the study of the problems of illumination, is of the convergent type. In the main, however, this type of laboratory is confined largely to various specialized research institutions and foundations.

The divergent type is the most common in industrial research and is designed to attack any problem connected with the industry which offers some promise of success whether the science involved be physics, chemistry, geology, mineralogy, metallurgy, psychology, or all combined. The most successful research in industry comes from these individual, divergent-type laboratories.

Cooperative research laboratories such as the National Canners' Association or the National Industrial Conference Board, which are supported by groups of manufacturing interests, have only a limited value, their activities being confined to those general problems in which all members of the industry have a common interest in the results.[14] Such organizations cannot aid one competitor against another and are without the interest and support which individual and privately owned laboratories enjoy as a result of the latter's value as a competitive weapon. Where questions of process, design, trade secrets, and even fundamental theories are involved there can be no opportunity for cooperative laboratories. In an industry where little or no research is done or in one composed of many small businesses any one of which is too small to afford a laboratory of its own, a cooperative laboratory sometimes affords the chief means of securing the benefits of scientific research.[15]

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[12] Quoted by M. S. Rukeyser in "What the World of Finance Talks Of," *Nation's Business* (September, 1928), Vol. XVI, No. 10, pp. 167-168.

[13] See pp. 401-405 above for a discussion of government research in industry.

Another type of cooperative industrial research laboratory is found in the Mellon Institute at the University of Pittsburgh. In this Institute various research fellowships are supported by industrial concerns which wish to have research work done. The research problems are submitted by the respective businesses to their research fellows who work them out at the Institute, using its laboratories, profiting by its guidance and the personal contacts with other scientists, and yet at the same time securing all the benefits for the respective manufacturers who are the donors of the fellowships and are paying the expenses of the research fellows. The value of such institutes is obvious: they afford an excellent training for young scientists and an inexpensive method for those manufacturers who wish to have some of their problems solved through research methods. The chief disadvantage in the system lies in the tendency of the donors to demand results at once and as a consequence most of the research is of an applied nature and tends to become superficial. Little research in fundamentals is done and to combat this defect the Institute founded a laboratory in pure chemistry in order to keep the fellows in closer touch with the fundamental theories of chemistry. Very little work in physics is done at this Institute and this also constitutes a handicap.[16]

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[14] For information regarding the latter board, see Magnus W. Alexander, *The Changing Environment of American Industry and the National Industrial Conference Board* (National Industrial Conference Board, Inc., New York, 1927), *passim.*

Opinion is sharply divided as to the effectiveness of cooperative effort. The cement industry, for example, is a unit in declaring that the gradual increase in the consumption of concrete in the last few years is largely the result of work done in the laboratories of the Portland Cement Association. On the other hand, certain textile and steel manufacturers oppose cooperative effort and insist that their success is due to independent research. See Davis, *op. cit.,* p. 5.

[15] See Mees, *op. cit.,* Chap. III.

For the benefit of those manufacturers who do not possess research laboratories, consulting laboratories sometimes are available. A problem may be submitted to such a laboratory which will conduct the necessary research, prescribe a plan of action for the manufacturer, supervise the installation of the necessary processes if necessary, and assume the responsibility for the success of the processes for a price that probably would not justify the establishment of a research laboratory by the manufacturer himself. At the same time the manufacturer secures all the benefits of secrecy. The Arthur D. Little, Incorporated, of Boston, is a chemical research laboratory of this nature and rendered valuable service during the World War by inventing the chemicals necessary if the manufacture of airplanes was to keep pace with the demands of the time.[17]

Since it is the object of all manufacturers interested in research to be supported by it rather than that they merely should support research, it is their first problem to decide whether they can support individual laboratories, or whether they must rely upon the cooperative laboratories, institutes of research, or the consulting laboratories. Few if any manufacturers regardless of size, can afford to cut themselves off from research in some form. Indeed, Dr. Mees believes that the smaller they are the more they may need it because of their relative disadvantage with large businesses. In addition, he believes that small businesses can make far more use of a research laboratory and secure a larger percentage of return for the expenditure than a big company can hope to do because of the quickness with which a return may be expected as contrasted with the long time which often must elapse for the large business before its research laboratory is a financial success.[18] In any event, neither the large nor the small business may ignore research in these days of scientific methods without seeing the handwriting on the wall and finally paying the penalty of financial disaster.[19]

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[16] Mees, *op. cit.*, pp. 52-54; W. A. Hamor, "Institutional Sources of Industrial Research Men," *Science* (Oct. 15, 1926), Vol. LXIV, No. 1659, pp. 380-381.

[17] See Little, *op. cit.*, p. 192; Mees, *op. cit.*, p. 55; and Holland with Pringle, *op. cit.*, Chap. IX.

Research by engineering societies [20]

As a part of industrial research brief consideration will be given to the general nature of the research conducted by the leading engineering societies.

The history of the research activities of the engineering societies and of their affiliated organizations resembles the course of research in general. The same general dispersive tendency which has characterized most research until recently also has characterized research in the engineering fields. And in a manner similar to that found in other fields reviewed above, this dispersive tendency has been followed by a movement toward coordination of efforts.

It was estimated in 1922 that there were in the United States about 150 engineering societies of national scope.[21] Many of these conduct investigations of a research nature, either in fundamentals or in questions having practical application. For example, the four senior societies of engineers—the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers—all have standing research committees. These committees supervise the special committees appointed to carry on specific projects. In 1928 the Civil Engineers had nine such special committees, the Mining Engineers ten, and the Mechanical Engineers twenty-

[18] *Op. cit.*, pp. 72-73.

[19] Those interested in such technical questions as the position of the research laboratory in industrial organization, the internal organization of industrial research laboratories, the staff of a research laboratory, the building and equipment of the laboratory, the direction of the work, and the design of a research laboratory for a specific industry, should consult such works as that by C. E. Kenneth Mees who devotes separate chapters to each of these problems.

[20] See Alfred D. Flinn, "Research for Engineering Societies," *Transactions of the American Society for Steel Treating* (Nov., 1922), Vol. III, No. 2, pp. 218-225.

[21] *Ibid.*, p. 218.

four.[22] Many of the societies publish journals which report the results of the investigations of research committees, technical divisions, and individual members. Some of the society committees have achieved valuable results even though they have labored under such handicaps as limited funds, limited research facilities, and the practice of members in devoting their main attention to their professions.

The large number of societies has resulted in part from differences in interests and needs and in part from the tendency observed in other fields to set up a new agency for each new purpose. As Mr. Flinn has pointed out, "The tendency to independent action has some justification, but it has also led to dissociation of groups which have much in common, with consequent disadvantages." [23]

It has been learned, however, that many engineering problems require the collaboration of specialists in several fields, and are beyond the powers of an investigating committee made up of engineers in one field. For these reasons a number of the engineering societies are cooperating with two great coordinating research agencies, the Engineering Foundation [24] and the Division of Engineering and Industrial Research of the National Research Council. Their special functions are to propagate the idea of research and to encourage specific research projects of fundamental importance likely to yield results of wide usefulness. These projects are such as other agencies are unlikely to undertake. Individual investigators or laboratories and society committees have insufficient time, funds, or special equipment or ability to solve many of the problems which require solution. Since the results of such fundamental studies will be of industry-wide or even national importance, no one company can be expected to bear the whole cost. University and government laboratories may be similarly unequipped or not ready to undertake such a study. The Engineering Foundation and the Division of Engineering and Industrial Research are intended to effect the cooperative solution of such problems by providing or obtaining funds, planning the mode of attack, and enlisting research workers.

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[22] *Engineering Foundation, Report for the Year Ended February 16, 1928,* Publication No. 15 (Engineering Societies Building, 29 West 39th Street, New York City, April, 1928), p. 5.

[23] *Op. cit.,* pp. 218-219.

[24] See *Engineering Foundation,* Pamphlet No. 2 (Engineering Societies Building, 29 West 39th Street, New York, February, 1925); *Engineering Foundation, Why? What? How? Whither? Answers for Laymen* (Engineering Societies Building, New York, 1927). See also a series of five articles under the general title "Engineering Research and the Engineering Foundation" in *Proceedings of the American Society of Civil Engineers,* Society Affairs (Nov., 1927), Vol. LIII, No. 9, pp. 356-357; (Dec., 1927), No. 10, pp. 387-388; (Jan., 1928), Vol. LIV, No. 1, pp. 2-3; (Feb., 1928), No. 2, p. 31; and (Mar., 1928), No. 3, pp. 61-62. Also see "Engineering Foundation's Services in Research," *Proceedings of the American Society of Civil Engineers,* Society Affairs (May, 1928), Vol. LIV, No. 5, pp. 461-463.

The services rendered and methods followed by the two organizations are similar. In collaboration with qualified authorities, they begin with an analysis of the problem presented, its importance, and the benefits to be expected from its solution. They make a study of what has been done or is being done in the field. They determine the time and cost required for a study, and what investigators, facilities, and funds will be available. If they decide to embark upon a research project, they map out lines of investigation. The project is placed under the charge of a committee representative of the industry or branch of the engineering profession interested in the problem, and of the research agencies which can contribute to its solution. The program then may be subdivided and definite parts assigned to appropriate subcommittees, engineering societies, university and industrial laboratories, government bureaus, and individuals.

The Engineering Foundation and the Division of Engineering and Industrial Research may assist research projects by financial as well as advisory help. They will assist in enlisting financial support, and the Engineering Foundation may itself appropriate funds. However, they do not assume direct responsibility for the conduct of a research. They do not maintain laboratories of their own; their contribution is to analyze the problem, to select the agency or agencies best qualified to study it, and to unify and coordinate the work of these agencies.

The Engineering Foundation, an endowed board dating from 1914, is a joint research organization of the four senior national engineering societies. The purposes of the Foundation are to promote interest in research and to aid researches in the application of the sciences to engineering, especially cooperative researches undertaken or approved by one or more of the engineering societies, founder societies, or others. The special function of the Engineering Foundation is to coordinate the research work of the founder societies, and their requirements are given priority, although the Foundation is not restricted to their enterprises.

It has published the results of some of the investigations in which it has participated in its series of *Publications*, and elsewhere. It also issues an annual report as one of the *Publications*. To promote interest in research it issues *Research Narratives* (semi-monthly, January, 1921-March, 1925; monthly, March, 1925, to date). From time to time, groups of the *Narratives* have been collected in book form.

The Division of Engineering and Industrial Research of the National Research Council is another research agency with which the engineering societies are cooperating.[25] The Engineering Foundation was active in organizing the Council in 1916 and since then has contributed financial and other support, particularly to the Division of Engineering and Industrial Research. The two agencies have cooperated in some research projects.

The Division of Engineering and Industrial Research is responsible for carrying out the general purposes of the National Research Council in the field of engineering and industrial research. Its objects are "To encourage, initiate, organize and coordinate fundamental and engineering research in the field of industry. To serve as a clearing house for research information of service to industry." [26]

Its activities have taken two main forms, the promotion of research and the administration of projects of national scope. In the field of promotional work, the Division has conducted among industrial executives, trade associations, and the public generally a campaign of education on the need for research and its value. It has also cooperated with individual companies, industries, and trade associations in analyzing technical problems and planning a program of research. The Division also has assisted in the organization of cooperative research by industries and companies which wish to conduct research in that way. When the help of the Division is requested, ". . . it assists in the determination of the more important chronic technical problems hindering the development of the industry, and acts in an advisory capacity in the selection of the appropriate research agency. The Division is prepared to give the benefit of its experience in advising as to methods of solution of problems, the securing of designs of laboratory buildings and equipment, and the selection of personnel. . . ."[27]

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[25] See *Division of Engineering and Industrial Research of the National Research Council in Cooperation with Engineering Foundation* (Engineering Societies Building, 29 West 39th Street, New York, December, 1925).

[26] *Loc. cit.*, p. 1.

In the field of research administration, the Division selects for study a few research problems of fundamental character or industry-wide importance and acts in an advisory, coordinating capacity in planning researches.

Reports of the results of the investigations participated in are published in the journal of the engineering society most interested, in a technical journal, or in the publications of the National Research Council—*Bulletins* (irregular), the *Reprint and Circular Series* (irregular), and the miscellaneous publications.

The Division maintains close connections with the engineering societies. In addition to the members-at-large, it includes representatives from twelve societies including the four senior societies, which have coordinated their own research work with that of the Division.

The funds required for administration are supplied partly by the National Research Council and partly by the Engineering Foundation. Funds available for specific researches are limited and must be supplied for the most part by the industries or public utilities which will benefit, or by interested donors.

The engineering societies also participate in a third organization which should be mentioned in this connection, the American Engineering Council.[28] Its members include a number of large national societies, as well as State and local organizations. The Council is not primarily a research organization, but was organized in 1920 to observe proposed legislation in Congress and to give expression to the opinions of engineers on national problems of an engineering character.

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[27] *Ibid.*, pp. 6-7.

[28] "A. E. C. Historical Résumé of Achievements and Policies," *American Engineering Council Bulletin* (Feb., 1929), Vol. VIII, No. 1, pp. 7, 9.

In addition, the Council cooperates with other bodies and with the government in promoting standardization, simplification of practice, elimination of waste, street and highway safety, and similar projects requiring research. Some of its studies have been published in book form, such as *Waste in Industry*[29] and *Safety and Production.*[30]

Commercial research

Commercial research is not as advanced or as well organized as industrial research but it is developing rapidly. Business men are discovering not only its value but its necessity. Dr. Little's thesis as to the handwriting on the wall applies as well to commerce as to industry.[31] Indeed, there is a pronounced modern belief that the chief problems of business are more pronounced in marketing than in production technique and for this reason one may observe a most notable development in research in the buying and selling aspects of business.[32]

Commercial research involves many difficult problems not found in industrial research. Problems of buying and selling involve not only scientific management, but research for the manufacturer, jobber, wholesaler, retailer, and practically every phase of economics, and in addition all those multitudinous and intangible factors involved in human psychology, many of which may be ignored in industrial research.[33] It is difficult, as a result, to be truly scientific in such research; the research is not well organized; the valuable principles which may be applied with certainty are few; and the results to be shown are not always tangible. Modern business men realize that it is wise to do all possible to eliminate guessing, and so are devoting themselves assiduously to finding scientific methods of solving their marketing problems. As a result, the attempts to aid have assumed a wide variety of forms and comprehend a large and confusing number of agencies with the consequence that there is much overlapping, confusion, and waste in the efforts expended.

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[29] (Federated American Engineering Societies, Washington, D. C., McGraw-Hill Book Company, Inc., sole selling agents, New York and London, 1921).

[30] (Harper and Brothers Publishers, New York and London, 1928).

[31] See, for a similar point of view, C. S. Duncan, *Commercial Research* (The Macmillan Co., New York, 1921), *passim.*

[32] As an example of the position taken by writers on marketing relative to this question, see Paul D. Converse, *Marketing Methods and Policies* (Prentice-Hall, Inc., New York, 1924), 2d ed., Chap. I. He says (p. 3): "Much more attention has been given to the efficiency of production than to the efficiency of market distribution. Production has been studied for generations, thousands of labor-saving devices have been invented, and mechanical power has been applied in hundreds of ways to increase output. . . . Yet until comparatively recent years, little critical or serious attention has been given to a study of market distribution."

Marketing methods are known to be highly inefficient in this country. Herbert Hoover pointed out that as a result of a study made by the Food Administration on the cost of distribution it was learned that the margin between our farmers and wholesalers in commodities (other than grain in some instances) are the highest, even in normal times, of any civilized state—fully twenty-five per cent higher than in most European countries. This expensiveness of distribution he thought is due to the great distances between producing and consuming areas; the lack of public markets; the long chain of manufacturers, brokers, jobbers, and wholesalers, through whose hands farm products pass; and the increasing demand for expensive service by customers. Converse, *op. cit.*, p. 8; *Saturday Evening Post* (April 10, 1920).

Some of the most valuable commercial research has been conducted by the government. The most outstanding work in this respect is done by the Department of Commerce, the Interstate Commerce Commission, the Federal Trade Commission, the Bureau of Markets in the Department of Agriculture, the Bureau of Labor Statistics in the Department of Labor, the United States Tariff Commission, and the Federal Reserve Board.

Outside of the government research we have the various consular reports; studies made by the United States and local chambers of commerce; the research conducted constantly and on an increasing scale by the larger banks, including the Federal reserve banks, and brokerage houses; research conducted by leading publishers of newspapers and trade journals, such as the *Journal of Commerce, The Annalist*, the *Commercial and Financial Chronicle*, the *Wall Street Journal*, the *Magazine of Wall*

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[33] For an account of the status of research in the psychological aspects of business, see a series of seven articles under the general heading, "Agencies for Psychological Research in Business," *Annals of the American Academy of Political and Social Science* (Nov., 1923), Vol. CX, but especially the article by W. V. Bingham, "Cooperative Business Research," *loc. cit.*, pp. 179-189.

The research worker interested in research in the management aspects of business should acquaint himself with the work of the American Management Association and the Taylor Society. See Ogg, *op. cit.*, pp. 276 and 289.

The research worker interested in research in advertising should consult Percival White, *Advertising Research* (D. Appleton and Co., New York, 1927).

Street, the *Journal of Commerce and Commercial Bulletin*, *System*, *Printers' Ink*, and a great variety of other commerce, trade, and marketing publications.

Valuable work is being done by a great variety of research agencies which publish index numbers and so-called business barometers. Some of the most important problems of marketing are involved in the questions associated with the different types of variations and trends found to exist in business. The amount of research conducted in this field in recent years has been tremendous, much of it has been highly scholarly, and the general results produced have been encouraging. Outstanding among the agencies engaged in such research are the Harvard Economic Service, the Babson Service, the Brookmire Economic Service, Moody's Investors' Service, the Standard Statistics Company, the American Telephone and Telegraph Company, R. G. Dun and Company, and Bradstreet.[34]

Trade associations are occupying a progressively more important place in research and often conduct and publish studies of first-rate importance. Among the most outstanding organizations which should be mentioned are the National Association of Credit Men, and various local associations of credit men such as those of Boston or Des Moines; the National Association of Retail Grocers and its locals; the National Retail Hardware Association; the National Retail Dry Goods Association; the National Retail Clothiers Association; the National Association of Wholesale

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[34] For an account of the work done by most of these agencies, see Charles O. Hardy and Garfield V. Cox, *Forecasting Business Conditions* (The Macmillan Co., New York, 1927).

An important and independent organization engaged in economic research and one which in no sense confines itself to commercial research is the National Bureau of Economic Research, organized in 1920, and located in New York City. Its purpose is to further "impartial investigation in the fields of economic, social, and industrial problems." It deals with topics of national importance which are susceptible of quantitative treatment. The chief support for this Bureau has come from the Commonwealth Fund and the Carnegie Corporation. Other contributions have been made by individuals and business enterprises. See *News-Bulletin* of the National Bureau of Economic Research, Inc. (July 18, 1927), No. 26, p. 2; *Income of the United States*, National Bureau of Economic Research (Harcourt, Brace and Co., New York, 1921), Vol. I, prefatory note.

The reader also should acquaint himself with the work of the Institute of Economics in Washington, D. C., created in 1922 and now a division of the Brookings Institution. See Ogg, *op. cit.*, pp. 186-188 and p. 452, n. 33 above.

Clothiers; the National Implement and Vehicle Association; the National Canners' Association, and others of a similar nature.[35]

In the field of advertising, research is making rapid gains. Advertising agencies are becoming more than brokers; they are turning their attention more and more to trade investigations and are seeking to give sound business advice to their patrons. They are attempting to become high-grade business advisers as well as advertising brokers. The Associated Advertising Clubs also is taking an active part in research.[36]

Auditing and accounting firms are widening their fields. The more expert accountants of today are becoming business advisers and economists. This is doubtless due to the fact that they too have seen the handwriting on the wall. The reports of an audit company frequently will carry a broad survey of the business and will conclude with recommendations leading toward a better and more intelligent control. "In other words," says Duncan, "the auditing companies, like the research department and advertising agency, are working for the business manager in a new sense." [37]

Universities, through their departments of marketing, advertising, and retailing, also are rendering valuable service through their studies, research, and publications. Perhaps our most valuable information on marketing principles has emanated from such departments in our schools of business. Business men are quite aware of this fact and call upon the leading educators in these fields for advice and counsel. In some instances such departments are liberally supported by leading merchants.[38] Every school of business in our modern universities possesses either courses, or departments, in the fields of marketing, advertising, and retailing. There is also a noticeable tendency in economics departments to introduce courses in the economics of consumption if not outright marketing courses. All of these facts show that greater emphasis is being placed upon the problems of marketing. But this merely means that the efforts in this direction are being brought more up to date, more in line with the accomplishments in other fields. It does not imply an overemphasis regarding the importance of marketing problems; it is merely indicative of a recognition of them, and a realization of the necessity as well as of the difficulty of their solution. It is merely one aspect of the general awakening to the larger fact that research is, indeed, the price of progress.

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[35] For a list of such commercial and industrial organizations in the United States, see *Commercial and Industrial Organizations of the United States*, Department of Commerce, Bureau of Foreign and Domestic Commerce, Domestic Commerce Series No. 5 (U. S. Govt. Printing Office, Washington, D. C., 1926), rev. ed. of June 1, 1926. About 9,000 international, national, sectional, and local commercial and industrial organizations are listed. (1) Those of national and international scope are listed alphabetically; (2) those of interstate scope, alphabetically; (1) and (2) also are classified by industry and functions; (3) those of State or territory are listed geographically; and (5) those of local scope are listed geographically and according to the city.

[36] Duncan, *op. cit.*, pp. 309-311.

[37] *Op. cit.*, p. 315.

[38] For example, the School of Retailing of New York University is supported by a group of merchants of New York City. New York University is unique with its separate School of Retailing.

Organized labor and research

Organized labor, like progressive entrepreneurs, has learned the value of research and is fostering it in an effort to protect and advance its own interests. The value of the information secured by research is valuable to the organization as such, to the members, and to the industry or trade. Without research, organized labor is at a disadvantage since the employers almost invariably go to the council table accompanied by experts with data at their fingers' tips. Gradually the unions have been moving toward organized research and today the amount of such research being conducted is formidable.

The leading organizations which maintain research departments are the following: the American Federation of Labor, the Amalgamated Clothing Workers of America, the United Mine Workers, the International Ladies' Garment Workers Union, the International Printing Pressmen and Assistants' Union, the International Typographical Union, the International Brotherhood of Electrical Workers, the American Federation of Full-Fashioned Hosiery Workers, the Brotherhood of Railway Clerks, the Brotherhood of Maintenance of Way Employees, the Brotherhood of Locomotive Engineers, Brotherhood of Railroad Trainmen, and the Boot and Shoe Workers' Union.[39]

The American Federation of Labor attempts to keep in constant touch with all developments affecting organized labor and has begun seriously to organize and develop its research. Specifically, it is developing an unemployment service based upon monthly reports on unemployment from all local unions located in twenty-four industrial centers. This material appears monthly in the *American Federationist.* The Federation also is developing an industrial service to be sent monthly, as confidential information, to trade union executives. Much of the research is in the nature of interpretations of research studies already made and the adaptation of these materials to trade union needs. In addition to the *American Federationist,* the Federation publishes the *American Federation Weekly News Service*, the *International Labor News Service*, the *Metal Trades Department Bulletin*, and the *Proceedings.* It also has published such special studies as *Wages and Labor's Shares in the Value Added by Manufacture* (1928) based upon the 1925 Census, and *Wages in Manufacturing Industries from 1899 to 1927.*[40]

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[39] See article entitled "Organized Labor Declared to Recognize Value of Research in Industrial Problems," the *United States Daily* (November 8, 1928), Vol. III, No. 211, pp. 1-2.

The National Unions of the American Federation of Labor publish their own journals of which eighty-six are listed in the *American Labor Year Book.*[41] The independent general unions, like the I.W.W., also publish their own journals; the independent trade unions publish some eighteen, the Trade Union Educational League and related groups publish seven papers; then there are about nine labor education and research periodicals some of which are mentioned below in connection with the proper research organizations. Only a few typical illustrations may be included within the space allotted.

The International Typographical Union, with headquarters in Indianapolis, has a bureau of statistics, but its work consists primarily in furnishing local union wage-scale committees with information not generally available except to the larger unions. Research is not undertaken for its own sake but for the practical and daily needs of the membership in the local unions. A list of the publications which are sent out is indicative of the type of research done and of the aid extended to the local unions. They are: *The Bulletin* (monthly); the *Typographical Journal*

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[40] Letter from Florence C. Thorne, American Federation of Labor, Washington, D. C., June 11, 1929.

[41] Rand School of Social Science (New York, 1925), pp. 463-465.

(monthly); *Book of Laws of the International Typographical Union* (1929); *Facts Concerning the International Typographical Union,* a pamphlet (published by the International Typographical Union, Indianapolis, 1927); *Minimum Wage Scales of Typographical Unions* (May 31, 1928, and a new issue, 1929); *Epochal History of the International Typographical Union,* compiled by James E. Lynch (Indianapolis, Nov., 1925); *Questions Answered,* a pamphlet; and *Typographical Terrace* (Headquarters of the Union), a booklet.

In a similar manner, the Brotherhood of Maintenance of Way Employees maintains a department of research and statistics for the purpose, primarily, of supporting the conditions of employment. The publications are a monthly *Journal* (not handled by the bureau of research) and rather elaborate mimeographed studies dealing with various wage studies, such as arguments before boards of arbitration on responsibility of the maintenance of way employees, their living costs and standards, hazards of employment, training and skill of trackmen, and many related questions.

Other typical journals of typical unions are *The Advance* of the *Amalgamated Clothing Workers, The United Mine Workers Journal, The Locomotive Engineers Journal, The Textile Worker, The Leather Workers Journal, The Shoe Workers Journal, The Paper Makers Journal,* and so on.

In addition, there are certain independent agencies which engage in labor research among which may be mentioned the Labor Bureau, Incorporated; the Workers' Education Bureau of America; the Rand School of Social Science; and the Labor Research Association—all of New York City. Only brief mention may be made of the work of these organizations.

The Labor Bureau, Incorporated, of New York City was organized in 1920 and maintains a staff of experts composed of engineers, economists, statisticians, and accountants to conduct research in behalf of the labor interests. It issues a monthly news letter, *Facts for Workers,* and conducts studies in such subjects as the effect of the eight-hour day, unemployment insurance, and the effect of machinery on wages. It has branches in Chicago and San Francisco and serves about 250 different labor organizations.

The Workers' Education Bureau of America, with headquarters in New York City, is an educational and research agency which organizes conferences at various centers to discuss current labor problems. It fosters joint activities between State federations of labor and the extension Departments of State universities. In cooperation with the American Federation of Labor, it reprinted the *Economic Brief* for the Street Railway Employees' Union in its fight against the threatened injunction by the Interborough Rapid Transit Company of New York. It published a case book on *Wage Arbitration* by George Soule and a brief history of *The American Party System* by C. A. Beard; a fortnightly service, *Workers' Education News,* has been sent out to labor papers in cooperation with the A. F. of L. *International Labor News Service;* and a monthly magazine is sent to the official trade union journals. In 1928 there were twenty-four State federations of labor affiliated with the Bureau. It is supported by unconditional gifts from the various affiliated federations and is taking steps to establish an endowment.[42]

The Rand School of Social Science in New York, founded in 1906, is the oldest workers' educational institution in America and is an autonomous educational auxiliary of the Socialist and labor movement. In addition to its school work, it maintains a Labor Research Department (opened in 1915) which publishes the *American Labor Year Book, The Labor Student,* a monthly index to labor periodicals (since 1926), now expanded into an *Index to Labor Articles* covering about 50 trade union and radical journals and 40 general magazines. In 1925 it published the first American Labor *Who's Who* containing biographical notes on about 1300 prominent figures in the American labor movement and 300 abroad. It also maintains a library and an information service. The library keeps on file practically all of the important trade union and labor magazines and papers issued in this country and many from abroad. Its reading room is constantly in use by trade unionists and other students of labor. The research department is constantly answering inquiries from trade unions and others. About one-third of its financial support comes from private persons and most of the remainder from the American Fund for Public Service.[43]

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[42] *American Labor Year Book* (Rand School of Social Science, New York, 1929), pp. 211-212.

The Labor Research Association of New York City is a small research organization created in 1927 and supported by persons interested in research in behalf of labor and by the income from research work done for labor organizations. It is not affiliated with any labor organization and is not supported by the official contributions of labor organizations. Thus far, the research has consisted of special studies appearing in monograph form. For example, one study called *Labor and Automobiles* (by Robert W. Dunn, the Executive Secretary of the Bureau) presents what is conceived to be the picture of the industry from the point of view of labor; another called *Labor and Silk* (by Grace Hutchins) is a work purporting to be a study of the silk industry from the laborer's point of view. Similar studies are being made with respect to coal, textiles, lumber, and steel. The Bureau also maintains a special committee on safety and is working along somewhat the same lines as the old Workers' Health Bureau.[44]

Social agencies and research. The Welfare Council of New York City

The number of social agencies, both public and private, which are doing research in conjunction with their welfare work is so multitudinous that to give an adequate picture of what is being done is well-nigh impossible. The trend toward coordination of effort, however, is clear just as the need for it is imperative. For this reason, a fairly typical illustration of the general situation may be secured by surveying briefly the nature of the work being done by the Welfare Council of New York City. Practically every large city has what is called a Council of Social Agencies and that is practically what the Welfare Council is for the 1200 charitable, health, and other welfare agencies operating in the five boroughs of New York City.

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[43] *American Labor Year Book*, pp. 217-218; Ogg, *op. cit.*, pp. 274-275.

[44] The Workers' Health Bureau was organized in New York City in 1921 and was in existence until 1928. It served affiliated trade unions for the following purposes: To secure facts on causes of occupational diseases, to assist unions in gaining health standards, to prepare health regulations for State codes and educational material on trade hazards, and to instruct union members in the care of the body. It published a *Monthly News Service* and various leaflets.

Another research organization in the field of labor but one entirely independent of organized labor, in so far as financial support or affiliations are concerned, is the American Association for Labor Legislation. This Association was organized in 1907 by a group of economists interested in fostering sound social legislation. It is the more or less conventional academic association, its membership of some 3100 being composed of those interested in labor problems and labor legislation. It holds annual meetings, conducts research into questions of working hours, workmen's compensation laws, unemployment and health insurance, health conditions, and related questions for the purpose of devising desirable labor legislation and recommending it to the State legislatures and to Congress. Its proposed legislative measures are drafted solely from the point of view of the public welfare and are attempts to safeguard the legitimate interests of the employers, employees, and the general public. This Association publishes the quarterly *American Labor Legislation Review.*

The Welfare Council, organized in 1927, is a voluntary association of the public and private social agencies in New York City which are willing to pool their information, experiences, plans and ideas in order to secure better factual bases for community planning, better team work among the social agencies, better standards of social work, better public understanding of and better support for it.

The Council is not another social agency; it does not render direct service to individuals; it is the clearing house through which social agencies may carry on such cooperative and coordinating activities as they choose.

Of the 1200 agencies, over 700 are now members of the Council which is governed by a board of seventy-five directors representing three major groups: the city departments engaged in welfare and health work, the social agencies, and the public. The Council's staff acts as its secretariat. A part of this secretariat is the Research Bureau which has a director and a staff of twenty-nine members to carry on research services.

Since the purpose of the Welfare Council is to serve as the center for the improvement of social work in New York, its research program is also directed toward that end. Prior to the organization of the Welfare Council there was very little reliable information on the scope, volume and quality of social services rendered in the city, or of the fluctuations and changes which have occurred in recent years. When the Research Bureau was organized, April, 1927, it adopted the policy of attempting to find out what is being done. At that time four studies were launched to that end.

The first study was devoted to an analysis of the income and expenditures of the social agencies of the city from 1910-1926 inclusive. This study has been organized and carried through for the specific purpose of finding out the trends in expenditures for different functional purposes—relief, health, recreation, etc.—endowments, payment for services rendered, contributions, etc. Field work for this study is still in progress. To cover the seventeen years of operation for all of these agencies and those which operated but became defunct within the period will require inquiry into the work of 1500 agencies and the examination of the accounts of perhaps a thousand. The data are being analyzed for functional groups.

Another research project which was launched at that time and which has just been completed consisted in making an inventory of all health services rendered. This study was published in the fall of 1929.

A third project has been concerned with a study of the eighty settlement houses in the city. Since the programs of settlements are somewhat fluid, it was necessary to make an inventory of all the elements of their program. When this was done, activities such as music, arts and crafts, and athletics were studied and appraised. The settlement's study is nearing completion and probably will be published in 1930.

The fourth project has been the making of a census of persons incapacitated through chronic illness. Social agencies of several types such as visiting nurses, family welfare and relief societies, medical social service departments in hospitals, homes for the aged, and others, reported that the problem of the care of chronically ill persons was becoming more difficult, and they asked for a study of the whole situation of the care of such persons in the city. In response to this request a study was inaugurated which has collected information on the facilities of the different sorts and volume of service rendered to the chronically ill and also on the personal characteristics and social situations of about twenty-one thousand persons known to these agencies. Tabulation of statistical material is in progress on this study and reports of the resources available for their care are in course of preparation.

In addition to these four somewhat extensive inquiries, the Research Bureau carries on several other activities. The principal one of these is the compilation of monthly statistical information sent in by the agencies of various types. Consolidated statements are sent out monthly of the operations of forty-one non-profit-making employment bureaus, eleven family service agencies, twelve sheltered workshops, thirteen agencies caring for the homeless, forty-five homes for the aged and six room registries. Complementary to this work are the studies which are being carried on to determine the trends in previous years of the more important groups of social agencies and of conspicuous institutions in the city. A study of the trends in the use of the Municipal Lodging House has been published in the *Proceedings of the American Statistical Association* (March, 1929). Similar studies are being conducted in the use of the almshouses of the different boroughs, payment for the care of the sick in hospitals, and in other forms of the care of the dependent.

The Research Bureau has not established any periodical to report on its work. It publishes studies as they are completed, and information regarding their progress is given from time to time in the *Welfare Council Bulletin,* published monthly except during July and August.

The Bureau operates under the general supervision of a research committee, the members of which are connected with practically all of the organizations in New York carrying on social research. In this way the work of the Research Bureau is not only supervised as to quality, but its plans are viséed by persons familiar with and responsible for the plans of other organizations. Similarly, the Research Bureau is kept informed of the plans and progress of work in other organizations.

The Research Bureau is supported entirely by grants from the Laura Spelman Rockefeller Memorial, the Rockefeller Foundation, and the Commonwealth Fund.[45]

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[45] Information relative to the Welfare Council secured from the Director of the Research Bureau, Neva R. Deardorff, and from a bulletin issued by the Council entitled *The Welfare Council of New York City.*

The work of the Russell Sage Foundation might have been discussed with propriety at this point had it not been mentioned above on p. 472.

All sociologists and social workers should be interested in the work done by the Conference of Social Work. This Conference, formerly the National

Religious organizations and research

Various church and religious organizations also have found it necessary to organize central research agencies in order to keep the constituent members properly informed as to important social events which involve questions of social justice that are naturally of interest to religious leaders in their efforts to interpret social movements from a religious standpoint. Religious leaders scattered widely throughout the country and often far removed from adequate libraries and reliable sources of information must rely upon some responsible research organization to supply them with accurate information regarding the important social movements which are of significance to the various religious bodies. In addition, a large proportion of the so-called religious leaders make no effort to keep themselves properly informed regarding important social movements even though surrounded with adequate library facilities. If they are informed at all it is because responsible research authorities place the necessary information directly before them in a manner which invites them to profit by it. From every standpoint these central research agencies render an important service and if preachers, priests, and rabbis will avail themselves of such services their value as religious leaders in their communities will be enhanced in a remarkable degree.

Conference of Charities and Corrections organized in 1873, with permanent headquarters at Columbus, Ohio, exists to facilitate discussion of the problems and methods of practical human improvement, to increase the efficiency of agencies and institutions devoted to this cause, and to disseminate information. Any individual or organization interested in its work may become a member upon payment of the fees. Membership is divided into six classes. Annual meetings are held and division committees are appointed to make the work of the Conference more effective. The divisional organization of the Conference consists of the following: I Children; II Delinquents and Correction; III Health; IV The Family; V Industrial and Economic Problems; VI Neighborhood and Community Life; VII Mental Hygiene; VIII Organization of Social Forces; IX Public Officials and Administration; X The Immigrant; XI Professional Standards and Education; and XII Educational Publicity. The names of these divisions indicate in general the nature of the fields covered by the Conference at its meetings and in its annual publication called *Conference of Social Work.*

At the annual meetings each division holds its own meetings, in addition to the general session, and listens to papers concerned with the problems of the division. These are published in its annual publication which contains a vast wealth of material on the subjects indicated in the divisional headings. This organization is essentially a clearing house of ideas—a sort of democratic forum.

Serious research by church organizations may be dated roughly from 1919. At first the efforts were, to a large degree, of the "reform" type, the first impetus arising from the urgent desire of Christians to correct what they believed to be evils in modern industry and particularly in industrial relations. As research work has progressed, the attitude has changed gradually from that of mere reform to that of including scientific inquiry as a basis for reform programs.

Today research by these central organizations is rather generally respected. For some time the propriety and value of research by churches was questioned but today, while it is not universally popular, there is a wide and increasing recognition of the value, propriety, and inevitability of such undertakings on the part of the churches. The chief problem at present is to secure financial support, since scientific research in the social sciences is not spectacular or easily dramatized and consequently not particularly popular.

Among the important central research organizations engaged in work for constituent religious bodies may be mentioned the National Catholic Welfare Conference, the Federal Council of the Churches of Christ in America, the Institute of Social and Religious Research, and the Social Justice Commission of the Central Conference of American Rabbis.

(1) The National Catholic Welfare Conference

This Conference is the centralizing organization of the Catholics of this country and plays a most important part in coordinating the various activities of the constituent Catholic bodies and laity. It was organized in 1919 as a permanent peace organization to succeed the National Catholic War Council formed in 1917 as the officially recognized agency of the Catholic body of the United States during the World War. The Conference, popularly known by the initial letters "N.C.W.C.," is incorporated under the laws of the District of Columbia and has for its general purposes "unifying, coordinating and organizing the Catholic people of the United States in works of education, social welfare, immigrant aid and other activities."[46]

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[46] *Salient Facts About the N.C.W.C.*, a pamphlet (published annually by the National Catholic Welfare Conference, 1312 Massachusetts Ave., N.W., Washington, D. C.), p. 3.

The Conference is conducted by an Administrative Committee of seven Archbishops and Bishops elected annually. The work of the Conference, which is financed largely by the Bishops, is divided into six departments: Executive, Education, Press, Social Action, Legal, and Lay Organizations. The Lay Organizations Department has two coordinate branches: the National Council of Catholic Men and the National Council of Catholic Women, each acting as a centralizing and coordinating body for the various constituent local organizations.

While some of these divisions naturally do more research than others, all do enough research of importance to justify brief mention.

The matters coming before the Executive Department are too extensive and diversified to be enumerated. In general, this department keeps in touch with practically every important question, both religious and secular, which affects Catholics. Seven bureaus are included in this department which also publishes the official organ, the monthly *N.C.W.C. Bulletin.* These bureaus are: Immigration; Historical Records; Publications; Publicity and Information; Motion Pictures; Business; and Auditing. The Bureau of Immigration assists immigrants. The Bureau of Historical Records is assembling the records of all Catholics who served in the World War. The Bureau of Publications brings before the public through various publications the Catholic viewpoint on questions of present-day concern. The Bureau of Publicity and Information maintains contacts with Catholics in foreign countries; the Bureau of Motion Pictures works for the general improvement of the screen. The nature of the Bureaus of Business and Auditing is obvious.

The Department of Education is a national clearing house with regard to the various phases of Catholic education both in the United States and elsewhere. The Bureau of Education, functioning under the N.C.W.C. Department of Education, performs for Catholic educational institutions throughout the country functions similar to those which the United States Bureau of Education performs for the public schools. Its activities embrace five distinct fields of service: Information, Research, Teachers' Registration, Health, and Library. Every two years there is published

The Directory of Catholic Colleges and Schools. The Bureau also conducts surveys, publishes educational literature in book and pamphlet form, maintains a general educational information service, and engages in various related activities. The importance of this work may be appreciated better if it is understood that the Catholic school system includes over 10,000 institutions, employs 77,000 teachers and cares for 2,420,000 students out of a total of thirty million.[47] The Research Section of this Bureau does a considerable amount of really important research.

The Press Department conducts the N.C.W.C. *News Service,* which is an international Catholic news-gathering and news-disseminating agency. This *News Service* fulfills for Catholic newspapers throughout the country a function similar to that which the Associated Press and the United Press perform for the secular journals. It is not considered a propaganda agency but strictly a news service. Its functions and work were scrutinized by Congress when it applied for the privilege of being represented in the Press galleries of the Senate and the House of Representatives. Conforming to the necessary conditions it was accorded these privileges. The Press Department is now serving eighty Catholic papers in the United States, Canada, and eleven other countries. It maintains a large staff of correspondents both in the United States and in the principal European capitals. The *News Service* also goes to the Bishops of the United States and to sixty-five Catholic universities and colleges.

The Social Action Department is another important research department. Its chief aim is to inform Catholics of the social teaching of the Church. Four principal fields of activity are covered by the Department: Industrial Relations, Citizenship, Social Work, and Rural Welfare. The Department works through lectures, conferences, pamphlets and other writings. Its publications include such studies as *The Social Mission of Charity, The Church and Labor, The Bible and Labor, Social Reconstruction, The State and the Church.* It also has published the *Half-Inch Labor Book-Shelf* on labor problems and their solutions. An important text-book published by the Department is the *Civics Catechism on the Rights and Duties of American Citizens,* which has been translated into fourteen foreign languages. Three auxiliary, independent committees have developed out of the work of this Department: the Catholic Conference on Industrial Problems, the Catholic Rural Life Conference, and the Catholic Association for International Peace.

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[47] See especially Francis M. Crowley (Director, N.C.W.C. Bureau of Education), "What the N.C.W.C. is Doing for the Catholic School System," *N.C.W.C. Bulletin* (Dec., 1927), pp. 29-30.

The Legal Department maintains records of Federal, State, and local legislation, enacted and proposed. It is a supply house of information and service, available at all times for the information of the Catholic people of the country. It avails itself of all public hearings held by the committees of the Senate and House on proposed legislation, and appears either in its own name or as the representative of particular organizations.

The two lay councils are primarily channels through which there is brought to the Conference a knowledge of the needs and activities of the Catholic laity of the country. They are organizations through which the Catholic men and women of the country may speak and act as a unit when the welfare of the Church seems to call for such expression.[48]

(2) The Federal Council of the Churches of Christ in America

The Federal Council was organized in 1908 as a coordinating and centralizing body and represents twenty-eight Protestant organizations including most of the important Protestant denominations.[49] It is supported by the constituent members and by contributions of individuals. Research work had a modest beginning in 1919 when the present executive secretary of the Department of Research and Education was made research secretary of the Social Service Commission.

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[48] *Salient Facts About the N.C.W.C., passim; The N.C.W.C. World War Records,* a pamphlet (Bureau of Historical Records, N.C.W.C., 1312 Mass. Ave., N.W., Washington, D. C., a continuing publication); *National Council of Catholic Women,* a pamphlet (National Headquarters, 1312 Mass. Ave., N.W., Washington, D. C., a continuing publication) which contains a complete diagram of the organization of the N.C.W.C. and its constituent divisions; *National Council of Catholic Men,* a pamphlet (National Headquarters, 1312 Mass. Ave., N.W., Washington, D. C., a continuing publication), also carries the diagram of the complete organization of the N.C.W.C.; The Most Reverend Austin Dowling, *The National Catholic Welfare Conference,* a pamphlet (a reprint from and published by *The Ecclesiastical Review,* 1305 Arch Street, Philadelphia, Pa., Oct., 1928); *Our Common Catholic Work,* a symposium with an introduction by the Most Reverend Edward J. Hanna, reprinted from *N.C.W.C. Bulletins* of Jan., Feb., and March, 1929 (N.C.W.C., 1312 Mass. Ave., N.W., Washington, D. C. 1929); and letters to the author from Patricia Ward, Director of the Bureau of Publicity and Information, and from Francis M. Crowley, Director of the Bureau of Education.

In 1924 the present Department of Research and Education was established with a qualified research staff to make the proper studies. This Department cooperates with the various commissions of the Federal Council such as the Commission on the Church and Social Service, the Commission on International Justice and Goodwill, the Commission on the Church and Race Relations, and the Commission on Christian Education, as well as with the Central Office of the Council. The various studies of the Department are published in the weekly *Information Service* and as *Information Service Monographs*. The *Information Service* offers concise information on civic, social, international, industrial, and rural problems when these have a distinctly religious or ethical phase. The nature of the research involved is more in the nature of secondary rather than of original research. The Department considers that "its principal *raison d'être* is the need for collating, authenticating and interpreting the findings of the many admirable research agencies in the United States and making them available to the churches." [50] Chief emphasis is placed on economic problems.

The *Information Service* is used by several thousand ministers, teachers, editors, students, and others, and is designed to furnish material for addresses and sermons, for discussion groups, as an aid in handling personal and parish problems, as material for parish papers and bulletins, for the library, and related purposes.

The *Information Service Monographs* are rather elaborate studies and appear irregularly when completed. They cover a wide variety of social questions and provide an excellent group of studies for the religious leader who wishes to keep abreast of the important current social problems. This list is becoming formidable. For example, in 1928 about sixteen such monographs were published.

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[49] For a list of the constituent bodies, see Samuel McCrea Cavert (Ed.), *Twenty Years of Church Federation, Report of the Federal Council of the Churches of Christ in America, 1924-1928* (Federal Council of the Churches of Christ in America, New York, 1929), p. 82.

[50] Cavert (Ed.), *op. cit.*, p. 83.

At present, the Department of Research and Education has under way a study of injunctions in labor disputes, the Colorado Coal Strike of 1927-1928, the Mooney-Billings Case, and International Debts and Reparations. The research program also calls for studies of national wealth and income, tariff, taxation, and the disposal of railway labor cases under the Railway Labor Act. In short, almost any economic, social, or political question in which there is special need for enlisting public interest is considered a proper subject for investigation.[51]

Special studies have been made from time to time, in response to calls from constituent groups. Calls are becoming more and more frequent and the Department is finding itself compelled to choose between the relatively important and unimportant projects. The most frequent demands have been for studies of industrial conflicts. Several projects have been undertaken in cooperation with the Social Action Department of the National Welfare Conference of American Rabbis. These projects demonstrated in an impressive way the possibility of working constructively with non-Protestant groups in the area of the practical application of religion to social situations, where doctrinal questions are not involved. "It is worth noting in this connection that the abandonment of the twelve-hour day in the steel industry was evidently in large part the result of an organized protest of Protestant, Catholic and Jewish national bodies which grew out of their association in research." [52]

An impressive feature of the Department's work has been the active cooperation secured from social scientists and social workers. Some of the ablest men and women in the fields of economics, sociology, public law, social work, and education have given their time freely in committee service and some of them serve on the permanent committees of the Department. Members of the staff of the Institute of Social and Religious Research also are among the closest advisers of this Department. In 1924, the American Sociological Society organized a section on Sociology of Religion, which is undertaking to correlate studies and stimulate further studies in the field of its interest. Members of the Federal Council's research staff have taken an active part in this movement. Two of the most elaborate religious surveys ever undertaken have been made in Greater New York under Y.M.C.A. auspices. The Executive Secretary of this Department was a member of the advisory commission of one of these surveys.[53]

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[51] A few representative samples of the studies in various years are: *The Twelve Hour Day in the Steel Industry,* Bulletin No. 3 (1923); *Social Aspects of Farmers' Co-operative Marketing,* Bulletin No. 4 (1925); *The Prohibition Situation,* Bulletin No. 5 (1925); *The Enginemen's Strike on the Western Maryland Railroad* (1927); *Social Aspects of Agricultural Credit* (1927); *The Coal Strike in Western Pennsylvania* (1928); *Unemployment: The Problem and Some Proposed Remedies* (1928); *Handbook of Rural Social Resources* (1928); *Industrial Review of the Year* (1928); *Employee Stock Ownership* (1928); *Annual Review of Rural Life* (1929); *Public Utilities Propaganda* (1929); *The Child Labor Situation* (1929); and various others of equal importance.

[52] Cavert (Ed.), *op. cit.,* p. 84.

(3) The Institute of Social and Religious Research

This is the official title adopted in 1923 by an organization formerly known as the Committee on Social and Religious Surveys. This Committee, in turn, had been organized in 1921 by certain members of the staff of the defunct Interchurch World Movement who wished to complete some of the unfinished work undertaken by that Movement.[54]

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[53] Mr. Cavert says that, "Among the most noteworthy contributions to the understanding of industrial relations has been the work of the Industrial Committee of the National Board of the Y.W.C.A." *Op. cit.*, p. 86.

[54] A word should be said regarding the Interchurch World Movement, which collapsed and was liquidated in 1920, not only because of the light it throws upon the work of later organizations but also because of the important part which it attempted to play in the field of religious research. The organization was one of the most ambitious of its kind ever attempted and it was this very fact that brought about its collapse.

The Interchurch World Movement was launched in 1919 as a result of a proposal by the Foreign Mission Board of the Presbyterian Church in the United States and the Commission on Interchurch Federations of the Federal Council of the Churches of Christ in America. Originally the Movement was an independent organization approved by various mission boards. Later, some forty denominations and societies approved it and nominated representatives for membership on the general committee. The Movement then widened its scope and based its plans on an ambitious five-year program. It planned to undertake a survey of the world in order to see what needed to be done to convert it to Christianity; it planned to bring the information secured to the attention "of every person throughout the United States"; and it planned to develop "the resources of life, money, and prayer required by the program suggested by the needs revealed in the world survey." See Stacy R. Warburton

The Institute, which is considered to be one of the most important of the research organizations engaged in research for the churches, is supported by private contributions and has no constituent or affiliated bodies. It is incorporated under the laws of New York and is governed by a Board of Directors of eight members. It has for its general purpose the building up of a body of incontrovertible facts which will serve all churches alike —especially Protestant churches—as a basis for formulating programs of action. It has stated as its belief that "in no field is there a greater diversity of tenaciously held opinion than in organized religion," and therefore it has set out to examine the bases of some commonly held opinions, and to demonstrate their accuracy or inaccuracy.[55] Its aim is to combine scientific methods of study with religious motive, and hence it undertakes only projects dealing with conditions in the life of society that in important ways affect or are affected by organized religion.

At first its functions were more diverse than at present. In addition to conducting research, it made grants to bodies pro-

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(Ed.), *Year Book of the Churches* (published by Fleming H. Revell Co., for the Federal Council of Churches of Christ in America, New York, 1920), pp. 269-270, and *The Handbook: A Source of Information for Speakers and Members of the Organization* (Interchurch World Movement of North America, New York, 1919), *passim.* The Movement attempted to comprehend almost every aspect of Christian work such as Christian education, ministerial relief and pensions, care of approved eleemosynary institutions, missions, and so on. It planned to conduct city, rural, national, and foreign surveys in order to see what should be done. The organization of the Movement was as ambitious as the plans. It included a general committee, an executive committee, a cabinet, and twenty-nine departments.

The only tangible results remaining from this Movement, aside from what the Institute of Social and Religious Research has rescued, are a few publications: A *World Survey,* American Volume (1920); a *World Survey,* Foreign Volume (1920); the rather famous *Report on the Steel Strike of 1919* by the Commission of inquiry of the Interchurch World Movement (Harcourt, Brace and Howe, New York, 1920); and many miscellaneous pamphlets of a propaganda nature.

Finding it impossible to carry out this ambitious program, the Movement was placed in the hands of a Business Men's Committee (Raymond Fosdick, Chairman) for liquidation. The details of liquidation are set forth in a pamphlet called *Report to the Churches, April, 1921, Submitted by the General Committee of the Interchurch World Movement of North America* (Interchurch World Movement, New York, 1921). The varous publications were distributed to those organizations primarily interested in them, the Institute of Social and Religious Research securing a substantial number.

[55] *Aims and Projects,* a pamphlet (Institute of Social and Religious Research, 370 Seventh Ave., New York, a continuing publication).

moting cooperation. In 1927 some restriction was made by focusing attention more closely than before on the Protestant churches in North America. In 1929 the scope and functions of the Institute were confined solely to research and investigation.

The work of the Institute is undertaken either independently or in cooperation with other social or religious agencies. Any research project, however, must be of such a nature that it can be brought within the field of a scientific survey or of scientific research.

A portion of its work has been to complete some of the studies (five) left incomplete by the Interchurch World Movement at the time of its dissolution. One of these was the Indiana Survey of Religious Education under the direction of Dean Walter S. Athearn of Boston University, published in three volumes with the following titles: *The Religious Education of Protestants in an American Commonwealth, Measurements and Standards in Religious Education,* and *Religious Education Survey Schedules.* Other projects taken over incomplete from the Interchurch World Movement were a study of social, economic, and religious conditions in the 161 Indian reservations and among the scattered bands of Indians in the United States, which has been completed and published as *The Red Man in the United States;* intensive regional surveys of town and country churches in twenty-five representative communities; a social and religious survey of St. Louis; and a study of Protestant ministers based on a survey of 161 theological seminaries in the United States and Canada.

The various research projects undertaken by the Institute which have not been carried over from the Interchurch World Movement but have been undertaken through its own initiative are similar in nature. These projects of the Institute fall under seven heads: (1) The Christian Church in its social setting, (2) the administration and supervision of religious agencies, (3) sociological studies, (4) foreign missions, (5) religious and character education, (6) race relations, and (7) methods of social inquiry.

The Institute attempts to guard against espousing specific policies and programs and confines itself to the analysis of conditions in order to discover trends so as to enable the responsible leaders of the church to frame and carry out whatever policies they may deem desirable. The studies made of the churches in North America may be classified conveniently as rural, urban, and suburban. Specifically, these studies have included regional church and community surveys in Oregon, Washington, and Kansas; a study of successful country churches; a comparative study of country churches; the interrelations of various non-ecclesiastical religious agencies; a survey of a number of villages in their socio-religious aspects in cooperation with the Department of Agriculture; a statistical study of the evolution, organization, and trends of the large city churches; a survey of Negro theological seminaries and religious training schools; a survey of Orientals on the Pacific Coast; and other kindred undertakings. The Institute, in cooperation with the Student Volunteer Movement, also published (in 1925) a *World Missionary Atlas.*

The staff which has been conducting these studies are men of high standing in their respective fields. Further information as to the nature of the Institute's work as well as regarding the present staff will be secured by consulting the list of publications given in the footnote below.[56] The Institute has published (up to 1929) its reports in thirty-five books and twelve booklets. A total of some 50,000 volumes has been distributed. The studies rank highly as pieces of scholarly research.

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[56] H. Paul Douglas, *How to Study the City Church* (1928); Douglas, *The Church in the Changing City* (1927); Douglas, *1000 City Churches* (1926); Douglas, *The St. Louis Church Survey* (1924); Douglas, *The Springfield Church Survey* (1926); R. H. Edwards, J. M. Artman, G. M. Fisher, *Undergraduates* (1928); T. J. Woofter, Jr., *Negro Problems in Cities* (1928); E. de S. Brunner, G. S. Hughes, M. Patten, *American Agricultural Villages* (1927); C. L. Fry, *American Villagers* (1926); Fry, *A Census Analysis of American Villages* (1925); Fry, *Diagnosing the Rural Church* (1924); Fry, *Home Mission Aid,* pamphlet (1928); E. R. Hooker, *United Churches* (1926); Brunner, *Village Communities* (1927); Brunner, *Surveying Your Community* (1925); Brunner (Ed.), *Churches of Distinction in Town and Country* (1923); Brunner, *Tested Methods in Town and Country Churches* (1923); Brunner and H. N. Nourse, *The Town and Country Church in the United States* (1923); W. S. Athearn, *The Religious Education of Protestants in An American Commonwealth* (1913); Athearn, *Measurements and Standards in Religious Education;* Athearn, *Religious Education Survey Schedules* (1924); Robert L. Kelly, *Theological Education in America* (1924); W. A. Daniel, *The Education of Negro Ministers* (1925); G. S. Hughes, *An Outline For a General Course in Rural Sociology,* a pamphlet (1927); *Christian Literature in Moslem Lands* prepared by a joint committee (1925); and three other volumes now out of print.

(4) The Social Justice Commission of the Central Conference of American Rabbis

It is somewhat difficult to fix the exact date of the origin of this Commission since it evolved haltingly from remote steps taken as early as 1885. The Commission in its modern form, however, may be said to date from 1918 since it was in that year that the Central Conference of American Rabbis promulgated its complete and formal stand regarding important social questions on which it hoped to secure concerted action by Jewish leaders and rabbis. In June, 1928, at its Chicago meeting, the Central Conference of American Rabbis endorsed a new set of principles, some of which represented a reiteration of former stands, and others, a new departure in the field. Only the social principles advocated in the last declaration will be considered.

It should be understood that this Social Justice Commission is an organization among the rabbis to guide the rabbis as religious leaders in dealing with social questions in their respective communities, to guide them in molding public opinion, and to guide the Central Conference and Commission in their concerted action on social questions. The rabbinical bodies have attempted to secure the cooperation of the Union of American Hebrew Congregations (U.A.H.C.), the lay conference, in fostering aggressive and concerted action with respect to social questions, but on the whole was rather unsuccessful until after 1925. In that year the U.A.H.C. adopted the social justice program of the Social Justice Commission and created a Social Justice Commission to aid in carrying it out. In 1928 the U.A.H.C. discontinued its Commission on Social Justice, thus leaving the present Commission purely rabbinical in nature. In 1929 support again was offered by the U.A.H.C.

At present, the work of administering the social justice functions is carried on by a chairman, who is at the same time the incumbent of a regular rabbinical position with all the demands made upon him that befall a rabbi in a large congregation. Because of lack of adequate funds, a separate department devoting itself exclusively to research has not been created although it has been recommended.[57]

The Jews, like the Catholics and Protestants, believe that their religious teachings should be carried over into the practical social questions of the day and the Social Justice Commission is the agency created to make this policy effective. The general purposes of the Commission may be understood from the following condensed form of the principles enunciated in the official program of the Social Justice Commission of the Central Conference of American Rabbis in June, 1928:

I. *The Duty of Social Mindedness.* Every worthy member of society must have an intelligent attitude towards social and industrial problems. Investors, in particular, must concern themselves regarding the ethical administration of the industries from which they derive dividends.

II. *The Distribution and Responsibilities of Wealth.* Unbridled monopoly and unrestricted material exploitation must be prevented. Inequalities of wealth are morally unjustifiable in the midst of poverty and want due to exploitation.

III. *Industrial Democracy.* Dictatorship of any class in industry is autocracy. Worker, employer and investor must share their inalienable rights in a finer industrial democracy.

IV. *The Sacredness of the Individual Personality.* Our machine age must not lose sight of the paramount spiritual dignity of the individual. Machinery and industry exist for man and not man for them.

V. *The Rights of Organization.* Employes as well as employers have the same rights of organization. Workers must be allowed to bargain collectively through such honorable means as they may choose.

VI. *The Fundamental Rights of Society.* Contribution to the common good and not the selfish service of a class must be recognized by all industrial groups as paramount.

VII. *Arbitration of Industrial Disputes.* Arbitration and not conflict is the ethical method of settling industrial disputes. Moral responsibility for evils of industrial conflict rests with the group failing to observe this principle.

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[57] The Chairman is Rabbi Edward L. Israel, Har Sinai Temple, Baltimore. The headquarters of the Commission are at Baltimore; all publications emanate from that place. It is to the Commission's secretary that the writer is indebted for information concerning the history, nature, and functions of the Social Justice Commission. Most of the information was secured from an unpublished article by Rabbi Israel entitled "As to Social Justice and the Central Conference Rabbis."

VIII. *The Rights to a Living Wage.* A living wage, protective of old age, illness or disability, as well as livable, is the first charge on industry. No business can attempt to maintain or further itself by beating down standards of living.

IX. *Unemployment.* Present day economic ills make the unemployment problem exceedingly vital. We endorse plans for national interlocking employment agencies, unemployment reserve funds, stabilization of employment in periods of depression by part time work, and unemployment insurance, as essential steps in alleviating the physical and moral distress of this evil.

X. *Social Insurance.* We urge adoption and expansion of old age pensions, mothers' pensions, workers' health and accident insurance, and state-directed rehabilitation of industrial cripples.

XI. *Hours of Labor and Days of Rest.* We support the reduction of hours of labor to the lowest possible point consistent with physical, mental, and moral good, with an unqualified maximum of eight hours per day, and with a five day week wherever possible.

XII. *Women in Industry.* We advocate special regard for the health and safety of women in industry and for their equal pay with men for equal work.

XIII. *Child Labor.* We oppose Child Labor in any and all forms and ask for proper and immediate state or Federal legislation.

XIV. *Prisons and Penal Laws.* Society's right to self-protection implies society's moral obligation to remove, wherever possible, causes of crime and to make punishment corrective in its spirit rather than retributional.

XV. *Lynching.* We decry lynching both as to the deed itself and the moral attitude which actuates or condones it.

XVI. *Civil Liberties.* We urge unqualified adherence to the constitutional rights of freedom of speech, press, and peaceable assemblage. We maintain the right and duty of a free pulpit. We condemn suppression of constitutional freedom by misuses of the Federal injunction.

XVII. *Social Justice in International Relations.* We believe that nations ought to outlaw war. We oppose economic imperialism, especially interference by force of arms with the autonomy of other nations to further claims of foreign investors in those lands. We condemn foreign investors who refuse to abide by the laws of the land in which the investment is made. We believe a popular referendum with absolutely free speech and press ought precede any declaration of war. We advocate an international conference to prevent private manufacture of arms. We oppose compulsory military training in schools and colleges. We advocate for our educational system the extollation of the virtues of peace rather than of those of war.

In an effort to carry out this program the Social Justice Commission has cooperated in investigations with the Research Department of the Federal Council of Churches of Christ in America and with the National Catholic Welfare Conference. Most of the investigations carried on in cooperation with the Protestants and Catholics have been accomplished by Rabbi Israel. For example, he was the investigator cooperating with them in the Western Maryland Railway strike and was joint author of the report issued. He was investigator with the Federal Council when the industrial situation in the Hosiery Mills in Indianapolis was investigated and was co-author of the report, "Industrial Situation in the Hosiery Industry," printed in the *Information Service* of the Federal Council. He participated in the investigation of the Steel Strike and in the report issued. He also has been a member of various commissions on arbitration, unemployment, old-age pensions, and the like. It will be seen that the Social Justice Commission thus far has been working largely through the efforts of its chairman, a situation that naturally renders it less effective than it would be with an ample permanent staff under his direction.

In September, 1928, the Commission began the issue of a small quarterly bulletin called the *Bulletin of the Commission on Social Justice, Central Conference of American Rabbis.* It describes the activities of the Commission in participating in social conferences and summarizes industrial and social developments of interest to the rabbis and others.

In 1929 the National Conference of Jewish Social Workers appointed a special committee to cooperate with the Commission. In February, 1929, the Union of American Hebrew Congregations passed a resolution providing for the re-creation of a Committee to cooperate with the Commission. Apparently the plans for cooperation will be carried out and the effectiveness of the Commission in the future should be increased.[58]

[58] The Jews also have a social service agency, national in scope in so far as Jewish interests are concerned, called the Bureau of Jewish Social Research,

The curve of research, not only among religious organizations but in practically every field of endeavor, is definitely and sharply upward. This is one of the striking characteristics of modern progress.

Inc. It has no constituent organizations and is representative only of the individuals interested in fostering social research among the Jews.

This Bureau was organized in 1919 as a merger of the Bureau of Jewish Statistics and Research of the American Jewish Committee, the Field Charities, and the Bureau of Philanthropic Research of New York City. The Bureau of Jewish Statistics and Research of the American Jewish Committee had been organized in 1914 to bring together information pertaining to the social, religious, and cultural conditions of the Jews in America and to gather statistical data of general interest. The Field Bureau of the National Conference of Jewish Charities, created in 1916, visited Jewish communities and advised with them regarding communal and philanthropic problems. It served also as a source of information upon Jewish philanthropic activities. The Bureau of Philanthropic Research, established in 1916, was to conduct studies of Jewish social work in New York City.

Since the activities of these organizations were related and duplicated each other, the Bureau of Jewish Social Research was created to merge their activities and carry on their work. It is supported by foundations, individuals, and earnings from surveys conducted upon request. Many of the facts and statistics collected have been published in the *American Jewish Year Book* and in other reports such as the mimeographed *National Appeals Information Service.* The Bureau is located at 71 W. 47th Street, New York, with a branch at 312 W. Ninth Street, Cincinnati.

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